



Final Report

Landscape Character Assessment of County Clare

March 2004

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Heritage Council

Landscape Character
Assessment of Co. Clare:
March 2004

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Date: March 2004

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EXECUTIVE SUMMARY

Environmental Resources Management (ERM), in association with ERA-Maptec Ltd, was commissioned by the Heritage Council in August 2002 to undertake a *Landscape Character Assessment of County Clare*.

The objective of a *Landscape Character Assessment* is to analyse the character, value, and sensitivity of landscapes identified within a particular area, in this instance County Clare. By understanding how different landscapes developed and evolved from both a natural and social perspective, decisions relating to the management and planning of the landscape can be made from an informed basis. Moreover, as landscape character assessments seek the views of communities living within particular areas, the process encourages debate and assists in gaining consensus on what is distinctive about each landscape. In turn, this facilitates a stronger understanding and engenders a greater appreciation of the considerable landscape resource of communities.

This study built upon an earlier pilot study undertaken by the same team in 1999 that sought to investigate the suitability of using Geographical Information Systems (GIS) as a basis for landscape character assessment. The pilot study essentially assessed the currently available digital data relating to landscape such as geology, land cover, natural and cultural designations. The study sought to develop landscape types using only the GIS system.

The current study sought to build and refine the previous work. A number of landscape types had been identified in the pilot study, and through extensive fieldwork these were refined by the study team. This required the recording of landscape elements, as well as considerable baseline research investigating land use patterns from prehistory to contemporary times. Additional research relating to settlement patterns, ecology, archaeology and geology all further informed this baseline understanding of the landscape within County Clare. A further task related to the identification of Seascape Character Areas around the County and this was further analysed by a dedicated workshop held in February 2003.

Throughout the assessment, consultation was a key element. An integral element of the process was the centrality of the people who live and work within the landscapes of the County. A number of people and organisations were also initially consulted, ranging from the state agencies based and operating locally to people with particular expertise on local history. Furthermore following the initial development of Landscape Character Areas, the team undertook a number of workshops around the County to allow local people to add further details, provide additional information and revise or amend boundaries and names of Landscape Character Areas.

Relative to the earlier study, this recent work had a broader remit and sought to demonstrate best practice in landscape character assessment. A number of

lessons have been learnt and the team found a series of tasks of particular importance in assessing landscape in such detail.

Key lessons learnt include:

1) Consultation is essential.

The consultation programme was extremely useful for a number of reasons. Firstly, at the initial stage of the project, discussions with key people and organisations facilitated the rapid gathering of information that otherwise may never have been identified or would have taken a long time. It also provided the team with an initial insight into the perceptions associated with landscapes.

Secondly, the extensive consultation programme allowed people to engage in discussions about their surrounding landscapes. In most instances, this led to very lively discussion and also demonstrated the depth of local people's knowledge of features within the landscape that field surveyors would otherwise have difficulty in interpreting or indeed identifying.

Thirdly, the consultation workshops facilitated the creation of consensus on key pressures on the landscape. This helped the team to understand how local communities perceive and regard their surrounding landscapes. It identified particular elements or aspects of their landscape that are of particular value whether for social, economic, environmental or spiritual reasons. This consultation process also ensured that the subsequent principles for landscape management for each area aimed to reflect key concerns and considerations identified by consultees.

The consultation process had a profound impact on the study contributing to a significant change in the study team's understanding of both LCA boundaries and names. Furthermore, consultation added a level of local knowledge and ownership to the whole LCA process that should be of significant benefit in future planning and management of the landscape.

2) The importance of fieldwork. This exercise allowed the team to verify that the Landscape Character Types derived from the GIS are valid in the field. Fieldwork also provided an invaluable opportunity to engage with the landscape and gain a thorough understanding not only of how the landscape is structured and has evolved but how it is evolving currently.

Two teams carried out the fieldwork. This ensured that the County was surveyed by people who could examine and discuss in detail issues such as key characteristics of the landscapes and boundaries between different areas. This approach to fieldwork also meant that when particular areas were problematic to define, the team had the opportunity to clarify these issues, largely through reviewing maps, field survey notes and discussion. To have this opportunity whilst carrying out daily fieldwork significantly assisted the assessment of the landscape and allowed for a number of people (in this instance a core team of four) to fully engage in assessing the character of the

landscape. This approach was particularly appropriate considering the scale of the assessment (i.e. at county level), for smaller units of assessments, a smaller number of surveyors would most likely suffice.

Additional fieldwork was also undertaken by the team to specifically assess the historical landscape, this brought archaeologists, and historical geographers together. This provided the opportunity to discuss in detail the evolution of the landscape and to understand the significance of historical activities on the landscape.

3) That the use of GIS offers a unique opportunity to collate data quickly and to initiate analysis of the landscape. The pilot study had used GIS as the principal means to assess the landscape and whilst it was at the time found that GIS in its own right could not adequately capture landscape assessment, that nonetheless, the GIS was an excellent tool that can support the preparation of a landscape characterisation. The team used the thematic maps (such as geology and land cover) to assist in their fieldwork in the first instance. The analytical opportunities offered by GIS were of particular benefit as it was used in conjunction with fieldwork as a means to help identify key drivers behind landscape character types. This led to a typology of landscape types accompanied by key characteristics that should be able to assist in future landscape assessments at the County level. The GIS was able to facilitate the quantification of certain aspects (such as % surface geology, or distance from rivers) that greatly assisted in the development of this typology. This approach should be of benefit in other landscape assessments.

Further Recommendations

A number of recommendations arose from discussions throughout the LCA process and from the Landscape and Seascape Working Group of the Heritage Council. These include the following:

- Further consultation and work with local communities in relation to the historic landscapes could assist in the local communities naming these landscapes with locally recognisable and identifiable names. This would further engage local communities with the surrounding landscape and generate local ownership of the landscape character assessment.
- In order to advance the development of a national model for landscape character assessment, an initial benchmarking exercise is necessary. Currently there is no analysis of the extent, detail or scope of LCAs that have been carried out a county level within Ireland. In order to develop a national model, it is necessary to assess the current situation around the country and to see how existing LCAs may be integrated and synthesised into a national LCA.
- The relationship between national parks and the surrounding landscape should be investigated further. A review of national parks

and their wider landscape context would be of considerable benefit for both the planning and management of the landscape. For example, the report identifies that the Burren National Park is contained largely within the *Landscape Character Areas Low Burren*, yet fieldwork and consultation identified an ambiguity in the boundaries and definitions associated with this national park and the wider Burren area.

- As a signatory to the European Landscape Convention, Ireland is obliged to undertake a number of measures including awareness raising and training, and identification and assessment of landscapes including values assigned to landscapes by local populations. Furthermore, to implement landscape policies, each country must introduce measures aimed at protecting, managing, and/or planning the landscape. In its statutory role to propose policies and priorities on the national heritage (including landscapes and seascapes) the Heritage Council has a critical role in the development of such landscape related policies and programmes.

The Landscape Character Assessment of Clare Report

Two key terms are commonly used throughout this report and definitions of these are presented below:

A *Landscape Character Type* is defined as follows:

Landscape types are distinct types of landscape that are relatively homogenous in character. They are generic in nature in that they may occur in different localities throughout the country. Nonetheless, where they do occur, they commonly share similar combinations of geology, topography, land cover, and historical land use. For example, limestone river valleys or blanket bog uplands are distinct landscape character types and are recognisable as such whether they occur in County Clare or other counties.

Figure 1: Landscape Character Type Loughside Fringe



Figure 2: Landscape Character Type Low Drumlin Farmland



A *Landscape Character Area* is defined as follows:

Landscape character areas are units of the landscape that are geographically specific and have their own character and sense of place. Each LCA has its own distinctive character, based upon patterns of geology, landform, land use, cultural, historical, and ecological features. Commonly, a landscape character area may be composed of a number of landscape character types. For example, the Lough Graney LCA is composed of three LCTs – Forested upland valleys, loughside farmland and glacial valley. However, the settlement patterns, historical and cultural associations of this area contribute to the distinctive character of this LCA.

Figure 3: Landscape Character Area Sliabh Bernagh



Figure 4: Landscape Character Area Lough Graney



The full report on the landscape of Clare is structured as follows:

Chapter 1: Landscape Character Assessment of County Clare: Overview

Chapter 2: The Evolution of the Clare Landscape- a discussion on the physical and social evolution of the County's landscape.

Chapter 3: The Present Day Landscape of County Clare- a discussion of the Landscape Character Types and Historic Landscapes found within the County.

Chapter 4: A Presentation of each Landscape Area-21 LCAs are discussed in terms of geology and landform, landcover and ecology, historical and human influences, condition and sensitivity to change, forces for change and principles for landscape management.

Chapter 5: A Presentation of each Seascape Area – 12 SCAs are discussed in terms of geology and landform, ecology, historical and human influences, condition and sensitivity to change, forces for change and principles for seascape management.

Chapter 6: Forces for Change- a discussion and analysis of forces for change operating on the landscapes of the County, identified through fieldwork and consultation and augmented by Principles for Landscape Management.

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In essence, landscape character assessment aims to improve our understanding of landscapes and provide a framework that allows landscape considerations to be taken into account in all aspects of decision-making and promotes a unified approach to landscape management. This study should provide a baseline against which change can be gauged and monitored.

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1.1 THE LANDSCAPES OF COUNTY CLARE

County Clare (shown in *Figure 1*) possesses a high diversity of landscapes, reflecting a wide range of landscape forms and elements that have been influenced by various human activities over time.

Lough Derg provides a natural boundary to the east and is fed by numerous rivers and streams, many of which weave their way through the extensive drumlin belt in the eastern part of the county. Other watercourses include the Graney, which rises from Lough Graney, nestled within the uplands of the Sliabh Aughties.

Considerable contrasts emerge between the east and west of the county, with extensive limestone areas composed of lower limestone pavements, pastures and loughs fringing the distinctive Burren uplands. The Fergus River, which rises above Corrofin, is a key landscape influence in the central part of the county, flowing through the county town of Ennis and feeding into the extensive Fergus estuary with its numerous islands and historical settlements. The Shannon estuary and its widening into the Atlantic has a profound influence along the south of the county, creating inlets and smaller estuaries. The Atlantic influence is seen along the extensive coastline, particularly in the rocky and dramatic coast on the north of Loop Head and indeed further along the coast in features such as coastal stacks and islands. The human impacts are evidenced along the Atlantic, with the high number of defensive promontory forts that provide distinctive punctuations along the coastal landscape.

Building on a pilot study undertaken in the late 1990s, the current study represents the first attempt to characterise, analyse and document the physical and historic landscape of the county in an integrated and comprehensive manner.

1.2 BACKGROUND AND OBJECTIVES OF THE STUDY

In 1999, the Heritage Council commissioned ERM in association with ERA Maptect, to undertake a pilot landscape character assessment of County Clare. This earlier study assessed the capability of Geographical Information Systems (GIS) to aid the landscape character assessment process.

In August 2002, Environmental Resources Management Ireland (ERM), in association with ERA-Maptect, was commissioned by the Heritage Council to prepare a *Landscape Character Assessment of County Clare*.

This current, follow-up study aims to conclude the landscape character assessment of County Clare and to meet the following additional objectives:

- To demonstrate the value and importance of landscape character to all activities that may impact upon that landscape and also incorporate consideration of the value and importance of seascape and historical landscapes as integral elements of the landscape;
- To reflect an integrated approach to landscape development and management that characterises all landscape types in natural and cultural terms, and not solely as designated or special landscapes;
- To reflect quality of life aspects of the landscape throughout the study and to recognise the views and concerns of communities living and working within the Clare landscape; and
- To fully reflect the principles enshrined in the European Landscape Convention and the Draft Guidelines on Landscape Character Assessment.

1.3

APPROACH AND METHODOLOGY

The study has used accepted, systematic methods of landscape assessment¹ supplemented by recent guidance on landscape character assessment² and draft guidelines specifically designed for use in Ireland³.

Key elements of the study approach are outlined below:

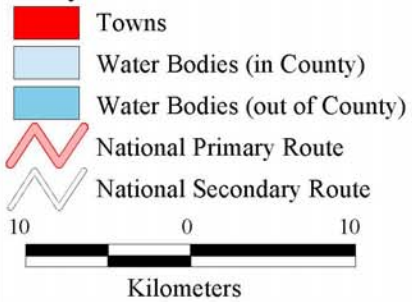
- *Desktop Research and Familiarisation:* The information base of the pilot study was reviewed, supplemented and updated as appropriate. Any policy changes were integrated, as were any recent data derived from ecological or archaeological field work, new academic research and finalised technical reports. The County Galway LCA was also reviewed with a view to ensuring consistency in approaches and level of detail between the two neighbouring counties. The team also met with a number of key individuals and organisations to inform their understanding of local landscape character and forces for change.
- *Fieldwork:* Field surveys were undertaken, between 26 August and 12 September 2002. The fieldwork survey team was led by Ruth Minogue of ERM. The team consisted of four experienced landscape professionals. In addition, the team carried out coastal fieldwork to assist in the seascape analysis. Two further days of fieldwork were oriented towards the historic landscape and were undertaken on 25 and 26 September 2002; the historic landscape team was co-ordinated


1 Countryside Commission, Landscape Assessment Guidance, CCP 423, Countryside Commission, Cheltenham, 1993.

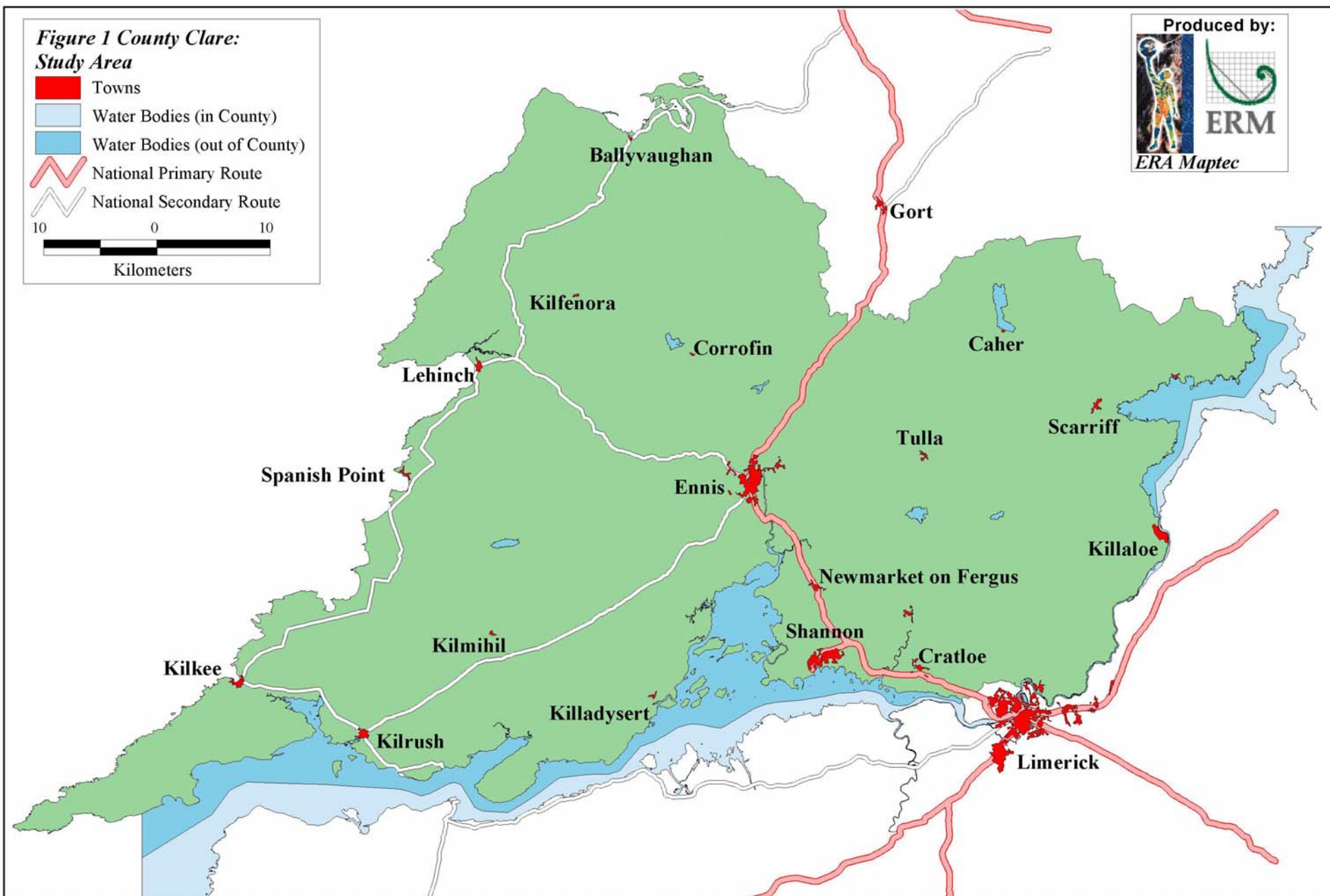
2 Countryside Agency and Scottish Natural Heritage, Interim Landscape Character Assessment Guidance, 1999.

3 Department of the Environment and Local Government, Landscape and Landscape Assessment, Consultation Draft of Guidelines for Planning Authorities, 2000.

**Figure 1 County Clare:
Study Area**



Produced by:

ERM
ERA Maptec



in the field by Ruth Minogue and comprised Gina Johnson, David Sankey and Peter Marsden with specialist advice and guidance from Dr Pat Nugent.

- *Public Consultation:* A total of six workshops were held between 21 and 25 October 2002 at a number of locations within County Clare. These workshops were led by Sean O’Riordain and Ruth Minogue of ERM. A copy of the consultation report is presented in *Annex A*.
- *Report Preparation and Mapping:* Extensive use was made of the GIS in order to quantify LCTs within the county and to facilitate validation of boundaries identified through fieldwork and through the GIS analysis. The GIS was also used to provide baseline information on topics including glacial processes and land cover, to allow analysis of historic landscape elements and in the identification of lines of vision around the county.

1.4 STRUCTURE OF THE REPORT

This *Final Report* provides a detailed evaluation of the landscapes of the county, including historical landscape types and seascape character areas. This discussion on the landscapes and seascapes of the county is augmented by the identification of forces for change within the county.

This report has been amended considerably in light of an extensive consultation programme within the county in late October 2002. In particular, the consultation process assisted in the refinement of names and boundaries of landscape character areas (LCAs) as well as providing considerable insight into local landscape values and forces for change.

The remainder of this report is structured as follows:

Chapter Two: *The Evolution of the County Clare Landscape.* This chapter presents an overview of the physical development of the landscape over time as well as the social history of the county. The chapter concludes with a brief overview of the development of the county over the past twenty years.

Chapter Three: *The Present Day Landscape of County Clare.* This chapter provides the definition and identification of landscape character types (LCTs), historical landscape types (HLTs) and habitat types (HTs) within the county. A description of each LCT and HLT is presented, accompanied by an identification of pressures on each type.

A *Landscape Character Type* is defined as follows:

Landscape types are distinct types of landscape that are relatively homogenous in character. They are generic in nature in that they may occur in different localities throughout the country. Nonetheless, where they do occur, they commonly share similar combinations of geology, topography, land cover and historical land use. For example, limestone river valleys or blanket bog uplands are distinct landscape character types and are recognisable as such whether they occur in County Clare or other counties.

A *Historic Landscape Type* may be defined as follows:

In broad terms, an archaeological or historic landscape can be defined as a discrete landscape based on the 'scale and integrity of the archaeological features [that] reflect significantly on the human history and land use of that area' (Cooney et al. 2000, 22).

Chapter Four: *A Presentation of each Landscape Character Area.* These presentations are accompanied by written descriptions on formative influences, elements and features defining each LCA, including historical landscapes, principal forces for change, their impact on the landscape, current condition of the landscape and sensitivity to change. Attention is drawn to those characteristics that are particularly distinctive, rare or special. An important aspect of this assessment is that all landscapes matter and that characteristics and features may be identified even in non-designated landscapes.

A *Landscape Character Area* is defined as follows:

Landscape character areas are units of the landscape that are geographically specific and have their own character and sense of place. Each LCA has its own distinctive character, based upon patterns of geology, landform, landuse, cultural, historical and ecological features.

The key to accommodating landscape change successfully is to understand landscape scale and character, and appreciate patterns of geology, soils, land cover, habitats, communications, field boundaries, settlements and local landscape values. Therefore, for each LCA landscape guidelines are also presented.

Chapter Five: *The results of the Seascape Character Assessment.* This chapter describes each seascape character area (SCA) as well as accompanying LCTs, pressures and sensitivity. Our analysis followed the guidelines set out in a Guide to Best Practice in Seascape Assessment devised by Countryside Council for Wales et al in 2001.

The Concise Oxford Dictionary defines the *Seascape* as a ' picture from sea to land, while the team largely based their assessment on this definition the following definition provided by the Guide to Best Practice in Seascape Assessment was also largely taken into account (except for views from sea to land which were beyond the scope of the study).

In the context of the landscape character assessment process a Seascape may therefore be defined as comprising one or more of the following:

- *Views from land to sea*
- *Views from sea to land*
- *Views along coastline*
- *The effect on landscape of the conjunction of sea and land*

In this study, while fieldwork has taken place along coastlines, data is still awaited to fill in gaps concerning bathymetry and biodiversity, which is not currently available.

Chapter Six: Forces for Change. This chapter discusses the various pressures identified to date on the landscape of the county. It also summarises key issues for each force for change and indicates some general principles that may assist addressing these forces.

The report concludes with a *glossary* of key terms and a *bibliography*.

In addition, the report is supplemented by:

- *Annex A: Consultation Report*
- *Annex B: Oblique Aerial Photographs*
- *Annex C: GIS Development*

2.1 INTRODUCTION

In order to understand the landscapes within the county, it is necessary to outline the physical and historical influences that have created the contemporary landscape.

The interplay between the solid geology, glacial processes, soil formation, hydrology and ecology has formed the basic materials upon which human activities have impacted. This is, however, a constant and ongoing interrelationship, with topography and access to water and soil conditions influencing the spatial distribution and types of human activities practiced within the county over the past several millennia. Although human habitation has been the most recent landscape influence, in many ways it has been the most profound. Patterns of land ownership, settlements and agricultural and ritual activities have all been modified in response to local variations of biotic and abiotic elements and constraints. A description of the physical landscape of Clare is presented below and is followed by an overview and analysis of human activities within the Clare landscape from prehistoric to contemporary times.

2.2 PHYSICAL INFLUENCES

2.2.1 *Solid Geology*

The underlying geology of County Clare (*Figure 2*) is formed from three major rock formations, each rock type being associated with particular landscapes.

The undulating lowlands of east Clare, generally covered by glacial deposited sediments and alluvium, are underlain by limestones of the Lower Carboniferous Series. The mountains and hills that rise above these lower areas, including Sliabh Aughty, Sliabh Bernagh (the highest mountain at 526m OD), and the Broadford Hills are composed of a variety of rocks of differing ages and composition. Old Red Sandstone is generally found around the perimeter of these uplands, whilst the interiors are formed by far older Lower Palaeozoic silts and shales. These usually create the rounded hills of these areas, which are generally covered by thin soils.

Limestone dominates throughout the central and north western parts of the county. This limestone belt runs north-south from the exposed limestone uplands and pavements of the Burren, underlying the drumlin belt surrounding Ennis and the Fergus River and extending towards the lower drumlins of east Clare.

West Clare, from Loop Head up towards Doolin and extending into the southern slopes of Sliabh Elva, feature extensive Namurian Sandstone Shales from the Carboniferous period.

2.2.2 *Effects of Glaciation - Drift Geology and Surface Geology*¹

As with virtually the whole of Ireland, the Clare landscape reflects the climatic processes operating in the last glacial cycle, the Midlandian Stage, from 23,000 to 13,000 BP². The current landscape is largely a consequence of the last glaciation and postglacial processes occurring since that time (*Figure 3*).

A number of coalescing ice domes constituted the ice sheets in Ireland, and ice moved radially outwards from these domes. The underlying bedrock was eroded through the movement of the ice and this formed sediment known as glacial till. In addition, sediment carried by the glacial melt waters was deposited as sand and clay, and in lakes or in the sea finer sediments of silt and clay were deposited.

Tills were deposited as extensive sheets or drumlins. The latter are a common feature of the Clare landscape and are frequently orientated north-east to south-west, turning westwards as one moves towards the coast. The grain of the landscape, as dictated by former ice movement, is very much in evidence throughout the county. Boulder clay constitutes the majority of glacial forms in the county, with numerous drumlins, particularly in the eastern and central area. The Loop Head peninsula on the south-west is dominated by kames whilst the north-west has little or no drift present.

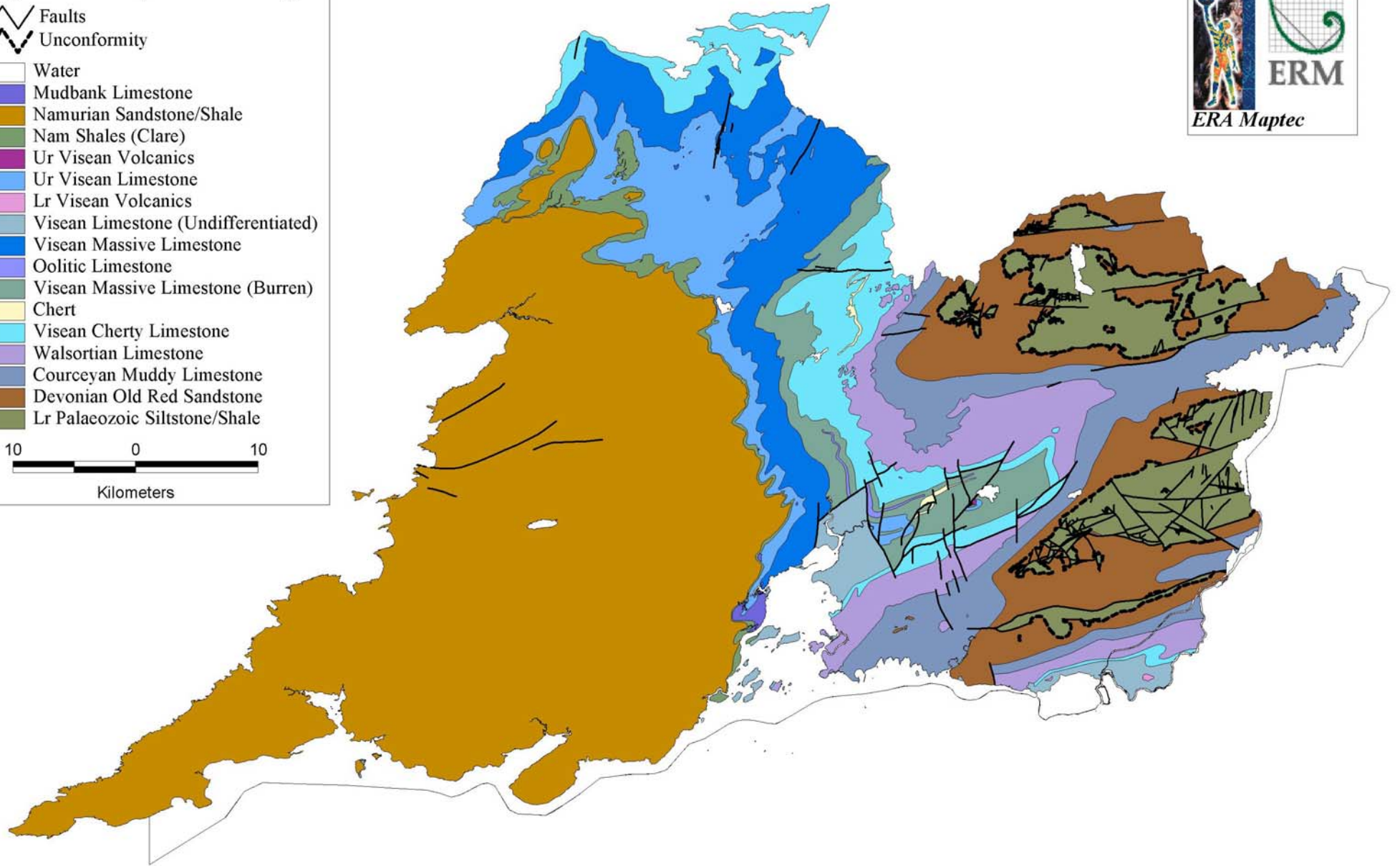
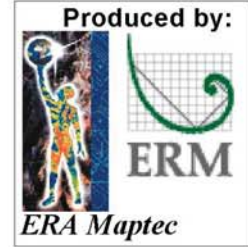
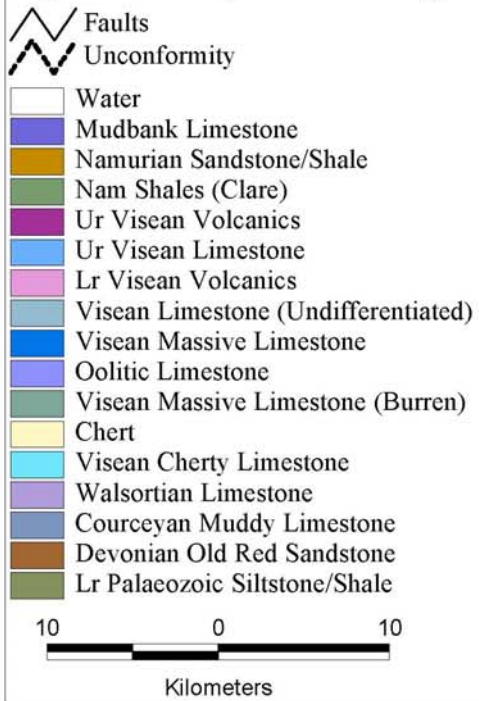
The central ice dome dominated this area, centred in County Galway and covering north Clare and Tipperary. The overall direction was south and south-west, although there were some local variations across the county. The Fergus estuary was subject to a strong north-south ice flow, whilst to the east ice flowed over the higher ground of the Cratloe Hills and Sliabh Bernagh, but also diverted around these hills and expanded into the east Limerick lowlands. These ice flow directions are shown through the orientation of drumlins in addition to distribution of erratics and glacial striae.

In other parts of the county, deposition was less of an influence and the erosional effects of glaciation can be seen where the bedrock is exposed or the till is very thin. This can be seen on the limestone areas to the east and north-east of the Fergus estuary. Variations in till deposits are also apparent within the county, where the cover is generally thin on the higher ground of west Clare, but thick deposits occur on the Loop Head peninsula in the south-west of the county. Reflecting the bedrock geology, much of the till is limestone


























¹ Much of this information is derived from Geological Survey of Ireland, Sheet 17.

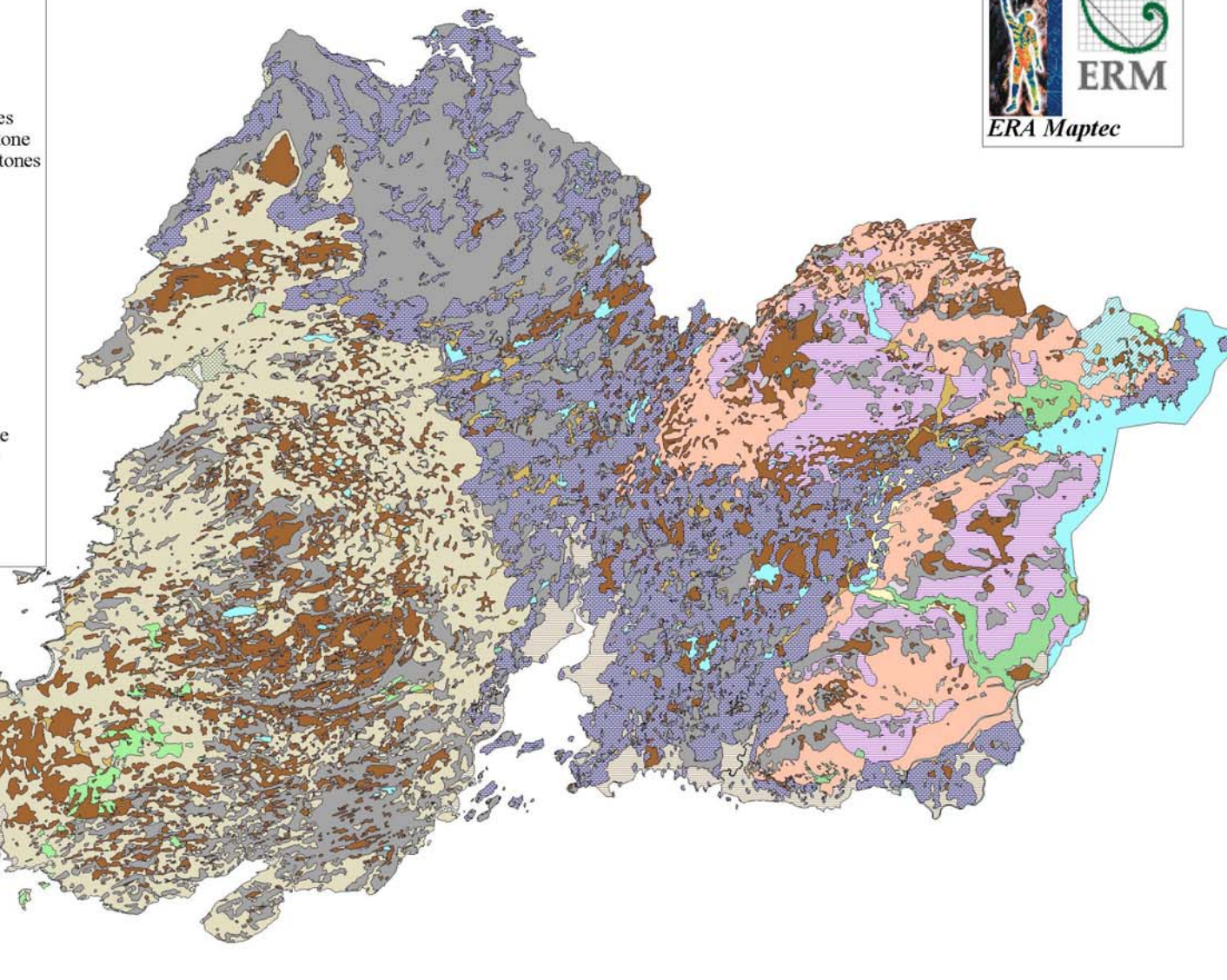
² J. Knight (2001). A geocultural classification of landscapes in Northern Ireland: Implications for landscape management and conservation. *Tearmann*, 1(1);113-124.

Figure 2 County Clare: Geology



**Figure 3 County Clare:
Surface Geology**

-  Alluvium
-  Colluvium
-  Esker
-  Undifferentiated Gravel
-  Gravel derived from Devonian Sandstones
-  Gravel derived from Lower Palaeozoic Sandstones
-  Gravel derived from Lower carboniferous Limestone
-  Gravel derived from Namurian Shales and Sandstones
-  Lacustrine
-  Lacustrine Clay
-  Lough
-  Estuarine Silts and Clays
-  Marine Sands and Gravels
-  Man Made Ground
-  Peat
-  Bedrock within 1 meter of the Surface
-  Till derived from Acid Volcanic Rocks
-  Till derived from Devonian Sandstone
-  Till derived from Lower Palaeozoic Shale
-  Till derived from Lower Palaeozoic Sandstone
-  Till derived from Lower Carboniferous Limestone
-  Till derived from Namurian Shale and Sandstone
-  Till derived from Sandstone
-  Interbedded Till and Gravels derived from Devonian Sandstone
-  Blown Sand in dunes



derived or mainly containing Namurian shales and sandstones. Within the tills of the Cratloe Hills and Sliabh Bernagh, the till is sandstone dominated.

When the ice melted, it retreated to the north and north-east, possibly depositing large amounts of sediment into the Shannon and Fergus rivers. As it retreated from the hills in the south-west of Clare, it moved through the valley of the Fergus. Further deposition of alluvium deposits occurred in the post-glacial period and these are quite extensive along the Fergus and Shannon estuaries. Bog formation was a strong feature of this period and much of the upland areas such as the Sliabh Aughties or Sliabh Callan are covered with blanket bogs, whilst in lower lying areas of limestone, raised peat developed in inter-drumlin hollows. A good example of such raised bog can be seen around Lough Cullanyheeda, close to Kilkishen in east Clare.

2.2.3 *Topography and Drainage*¹

The topography of County Clare can be divided into three general groups (*Figure 4*). Lough Derg and the River Shannon are fringed by the undulating lowlands of east Clare; these are close to sea-level and this is reflected by the numerous lakes within this area. The undulating lowlands are framed by the upland areas including the hills of Sliabh Bernagh (526 m OD), Broadford and Cratloe Hills. The Sliabh Aughty Mountains extend into the north-eastern part of the county, and include the mountains of Cappaghbaun and Turkenagh.

Towards the north-west the distinctive landscape of the Burren occurs. The Burren rises up to 300m in the north with the highest summit at Sliabh Elva (344m) and drops to approximately 100m in the south, and is commonly bounded on all but the southern boundary by steep scarps. Within this karstic environment, surface water features are largely absent, with the unique and notable exception of turloughs, the largest of which is located at Carran. Furthermore, the extensive drainage system in this area has led to the formation of numerous subterranean features including caves such as Pol an Ionain and Ailiwee.

To the west of the Fergus estuary a number of gentle hills rise from the lowlands. Sliabh Callan is the highest hill in this western region, rising to 391m. To the south and west of these hills, the land is generally quite low, lying and the coastal peninsula is characterised by numerous promontories, bays and in places sheer cliffs.

Drainage in the county is largely defined by the River Shannon, its tributaries and its largest lake, Lough Derg. As the Shannon flows from Lough Allen to Killaloe over 205km, the elevation declines by only 17m; the river meanders extensively and is subject to frequent seasonal flooding in places, most notably the Shannon Callows in Counties Tipperary and Offaly. The river drops 30m

¹ Sleeman A.G & Pracht. M, 1999; *Geology of the Shannon Estuary*. Geological Survey of Ireland.

between Killaloe and Limerick, a distance of 25km. The river has been subject to considerable modifications over the past 200 years and much of the flow downstream of Lough Derg has been diverted via the Parteen Villa dam to the hydroelectric station at Ardnacrusha since the 1920s. The Shannon enters the Atlantic at Loop Head.

The other principal river in the county is the Fergus, which rises north-west of Corrofin and has numerous lakes associated with it including Lough Inchiquin. It flows southwards through Ennis and enters the sea at Clarecastle. The estuary of the Fergus is an important and distinctive landscape feature within the county, due to its long history of communications and broad estuarine environment that is of special ecological significance.

Within the drumlin area west of Ennis, there are a high number of loughs trapped between the drumlins after the last glacial period. This can be seen in the distinctive northeast south-west orientation of the loughs and drumlins within this area.

2.2.4 *Soils and Agricultural Capability*

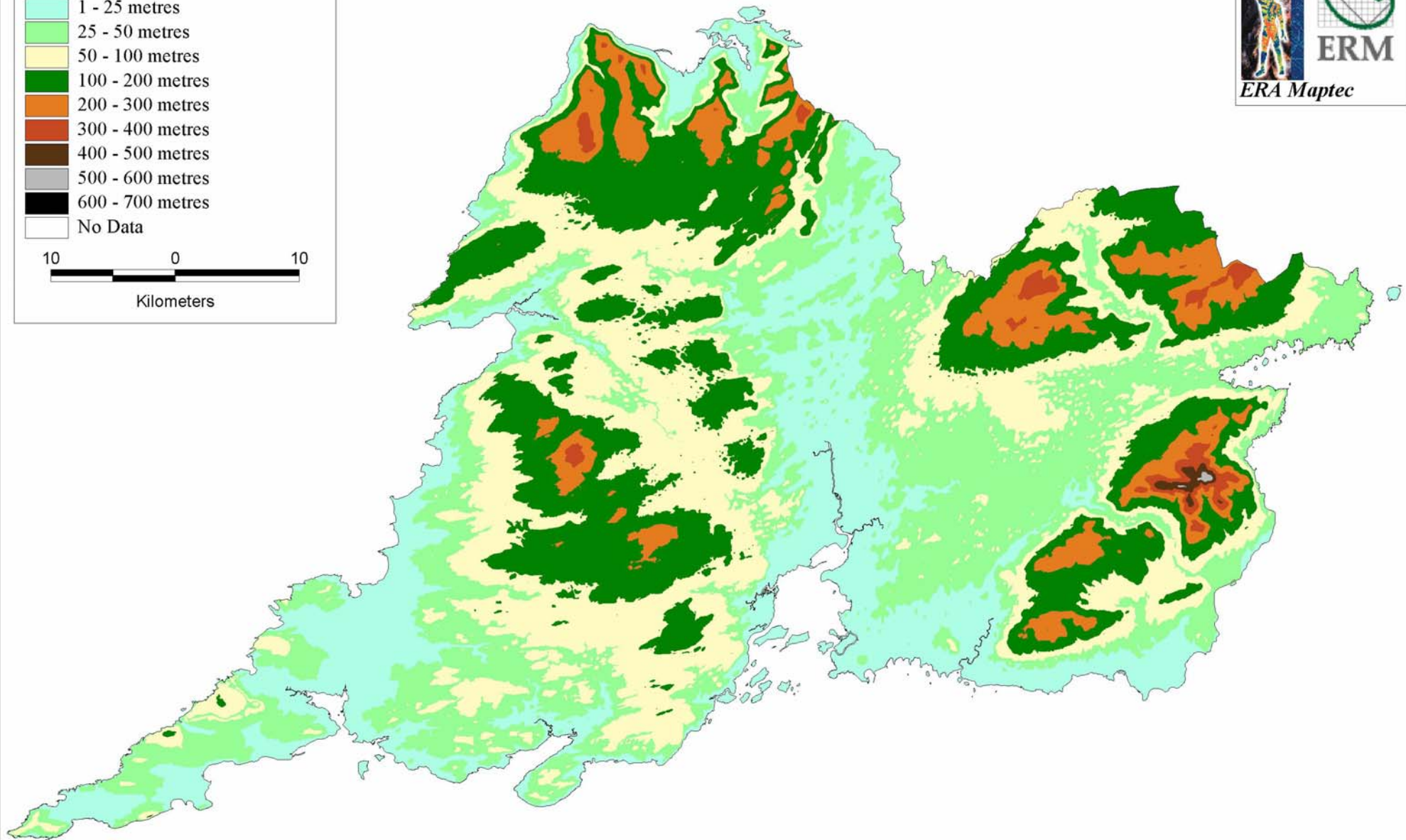
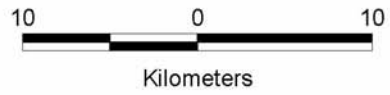
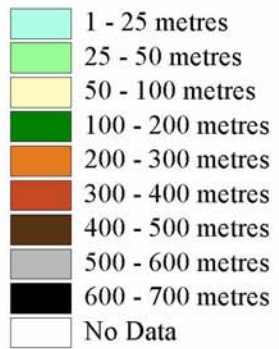
In County Clare, the various types of soil have developed from a combination of numerous factors, most notably topography, climate and geological parent material. The influence of climate on soil formation is evident by the widespread occurrence of blanket peat in the County and by the intensive leaching and podzolisation¹ of many of the soils, even at relatively low elevations.

East Clare is also dominated by gleys, but shallow brown earths and peats and peaty gleys exist on the eastern slopes of Sliabh Bernagh. In northeast Clare peat and peaty gleys are common (in the region of Sliabh Aughty), while shallow brown earths occur in northwest Clare. Generally most of western Clare up to the Fergus estuary comprises gleys. Grey brown podzolics occur in mid-central Clare.

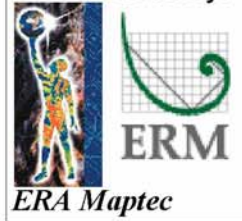
Much of the land in the county is of a heavy and textured soil type, which does not lend itself to tillage and is best suited to grass. There are limited areas where arable (wheat, barley, oats and root crops) farming is very successful, however the hectareage under these crops has been declining steadily during the past few years. Cattle and dairy farming remain the principal agricultural activities within the county.

¹ Process of soil formation whereby iron, aluminium and organic matter in the soil move downwards leaving a leached horizon of soil.

**Figure 4 County Clare:
Topography**

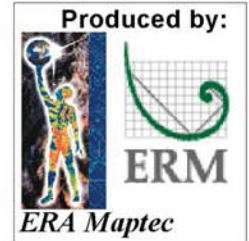
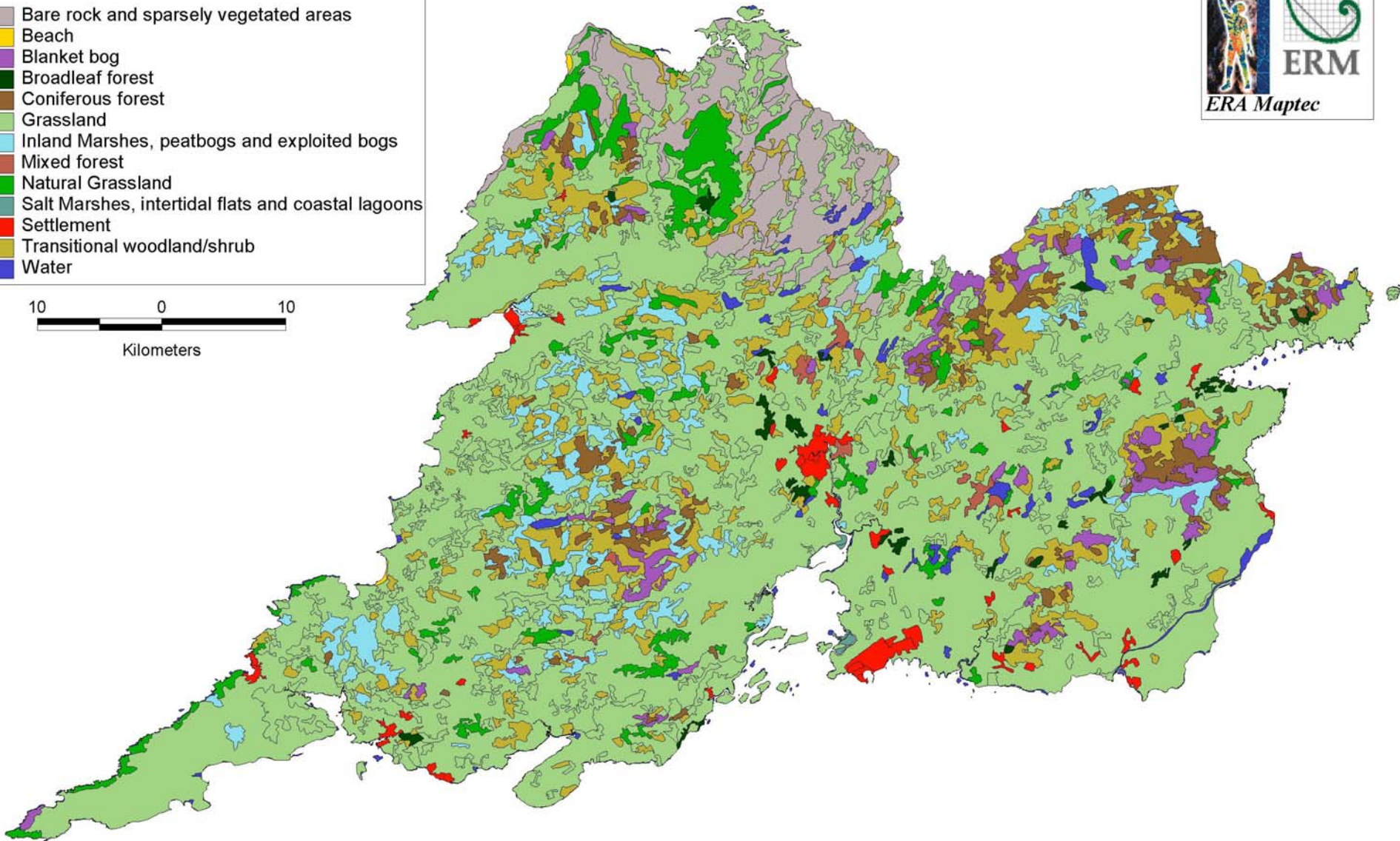
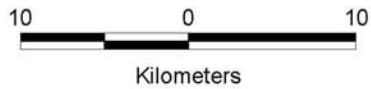


Produced by:



**Figure 5 County Clare:
Land Cover**

-  Bare rock and sparsely vegetated areas
-  Beach
-  Blanket bog
-  Broadleaf forest
-  Coniferous forest
-  Grassland
-  Inland Marshes, peatbogs and exploited bogs
-  Mixed forest
-  Natural Grassland
-  Salt Marshes, intertidal flats and coastal lagoons
-  Settlement
-  Transitional woodland/shrub
-  Water



Clare is composed of a mosaic of vegetation and habitat types (*Figure 5*) that have evolved in response to the underlying and surface geology, topography, soil and human activities.

According to the data provided by the most recent Corrine analysis of the county (2000) ¹ the predominant land cover within the county is grassland, accounting for approximately 64 per cent of total land area. This reflects the strong agricultural activity within the county and in particular the move to dairy farming over the past thirty years.

East Clare has extensive areas of grassland, interjected with pockets of arable landuse, raised bog, natural grassland, broadleaf woodland and numerous loughs, often fringed with broadleaf. This pattern reflects the largely agricultural landuse within the broad drumlin belt. Settlement is represented by the villages and towns within the drumlin belt and along Lough Derg, most notably, Killaloe, Scarriff and Mountshannon.

Within the uplands of east Clare, larger tracts of habitats and landuse can be seen. The upper slopes of Sliabh Aughty and Bernagh are largely composed of blanket bog, coniferous and broadleaf woodland. Occasional pockets of natural grassland are found at the margins of these larger habitat types before the agricultural grassland dominates once again on lower slopes and towards the drumlins. There is a little village settlement and this assists in the creation of remoteness that helps define the character of these upland areas.

The distinctive exposed limestone can be seen in the northern boundary of the Burren area and this is frequently interjected with quite extensive areas of natural limestone pasture and grassland. Occasional pockets and fringes of broadleaf woodland, likely to be hazel scrub, are located on the margins of the exposed limestone and grasslands. Once again, this distinctive interplay of habitat types and land use creates strongly defined landscapes within this Burren area.

The western part of the county, extending from Doolin to Loop Head and eastward towards Ennis is composed of a more complex habitat and landuse pattern. Whilst the Loop peninsular is composed almost entirely of grassland with pockets of natural grassland on the Atlantic side, as one moves further inland this is replaced by increasingly complex patterns of coastal bog (Sragh Bog) to the west of Kilkee, with pockets of arable, broadleaf and natural grassland scattered amongst the ubiquitous grassland. As one moves towards the higher areas of west Clare, such as Ben Dash, Sliabh Callan and the higher drumlins around Kilnamona, blanket bog, coniferous forestry and peaty soils are increasingly evident.

¹ It is important to note that the Corrine dataset identifies land cover parcels in areas of 25 hectares and hence fine quality land cover analysis is not afforded with this system.

Land use tends to simplify around the Fergus estuary towards the River Shannon and up to Ennis, with a high dominance of grassland, occasional arable pockets towards the west of the Fergus estuary, and the principal urban centres of Ennis and Shannon within this area, with the smaller settlements of Newmarket on Fergus and Clarecastle. This land is often of better quality than the surrounding areas, and the denser settlement pattern including a higher prevalence of estates and large houses testify to the attractiveness of this area to humans over history.

2.3 *HUMAN INFLUENCES*

2.3.1 *Overview*

Although Ireland has a relatively low population density and given that traditional farming in Ireland has tended to be small scale, the modern landscape is largely a product of human interaction and interference. In 1978, Aalen described conventional land-use in Ireland as ‘extensive rather than an intensive use of land’, and while there has been a trend toward intensification throughout Ireland in the intervening decades, Aalen’s statement still holds true for areas along the west coast, including parts of County Clare. The past and present management of land continues to be a ‘fundamental consideration in any analysis of the origin and character of the cultural landscape’ (Aalen 1978, 212).

The influence of current land-use is considered elsewhere in this report (*Chapters Four and Six*). In this section, an overview is provided of past human activity in County Clare, the influence of past practices on the landscape and the extent to which archaeological and historic elements survive in, or influence, the modern landscape.

In broad terms, an archaeological or historic landscape can be defined as a discrete landscape based on the ‘scale and integrity of the archaeological features [that] reflect significantly on the human history and land use of that area’ (Cooney et al, 2000, 22). Of primary importance in this respect is our perception of archaeological sites and monuments in their local and wider contexts. Some monuments, such as Poul nabrone portal tomb or Leamanagh tower house, are impressive and dominant features in the landscape and have consequently acquired a modern status that owes little to their original functions. Other high-profile sites, such as Bunratty or Dromoland Castles, are so deeply ingrained on the tourist trail that they are no longer regarded simply as archaeological or historical ‘monuments’, but are promoted as individual commercial and tourist attractions. There are countless other monuments that nestle comfortably into their landscape and are generally considered part of the scenery, while others retain religious, cultural or traditional associations that elevate their significance beyond that of purely visual elements in the landscape.

Monuments are readily accepted as part of the visual landscape. However it is the additional layers of interpretation and understanding of historical human inter-action that informs the characterisation of the historic landscape. In recent years, analysis of historic landscapes has incorporated what have become known as low-visibility sites, such as degraded enclosures, field systems, buried habitation and burial sites, historic elements that have been incorporated into modern buildings etc. There are also structures and features that are often neglected because of the blurred distinction between historic and modern, particularly with regard to industrial sites such as mills, quarries, canals etc. These sites must be considered as integral parts of any landscape analysis, because they are essential to understanding the formative processes that have led to the current landscape.

In almost every case, monuments viewed in isolation are of limited use to the interpretation of the present and past landscape. Cooney et al. (2000, 27) promote the idea of the 'whole country as an archaeological landscape', but also stress the need to identify complexes of sites that can be defined or designated as archaeological landscapes. This is essential if we are to form a more realistic perception of how people affected the modern landscape. The work of the Discovery Programme's North Munster Project, particularly in south-east Clare, demonstrates the value of regional and landscape-based studies.

It is not just the perception of archaeological sites and monuments that needs to be reviewed, the perception of the rural countryside has also been affected by changes in land-use and lifestyle patterns. Aalen (1997, 5) suggests the increasing urbanisation of Ireland has led to the 'misplaced view of the countryside as "natural"', and this is undoubtedly true of parts of County Clare, particularly the landscape of the Burren, which is internationally regarded by many as being of 'outstanding natural beauty'. The truth is that the Burren and the other landscapes of County Clare have been 'profoundly influenced by human activities' since prehistoric times (Drew, 1997, 287).

The Burren, of course, is but one region in a county that has a diversity of archaeological remains and landscapes. To the south and east, the county is defined by the River Shannon, the largest river system in Ireland, whose estuary has been 'largely tamed by hundreds of years of human toil' (O'Sullivan 2001,). Much of the bogland across the county also owes its origins, at least in part, to human activity, and to the west of the county the landscape of the Atlantic seaboard has been irrevocably altered by settlement patterns and commercial ventures.

In order to understand the prehistoric and historic influences of human activities on the landscape of County Clare, it is necessary to gain a broad understanding of the key human activities, events and developments that have occurred over the past 10,000 years.

2.3.2 *Early Prehistoric Clare (up to c. 4,000BC)*

The early prehistoric period in Clare, as elsewhere in Ireland, is reflected more in the hidden landscape than in the tangible, visible countryside.

It is generally accepted that Mesolithic hunters and gatherers in Ireland did not build any surviving monuments, ritual or otherwise. However, it is likely that human settlements were established in County Clare during the Mesolithic period (given that evidence exists for Early Mesolithic settlement at nearby Lough Boora in County Offaly) and that the lack of evidence is a function of information survival and accurate recognition. It is probable that Mesolithic hunters and gatherers may occasionally have burnt woodland (to encourage game grazing areas), although such forest-fire clearing was unlikely to have permanently affected the landscape. Their impact on the contemporaneous landscape was, therefore, subtle and few traces of the Mesolithic period¹ in County Clare remain.

2.3.3 *Neolithic (c. 4,000-2,500BC)*

The first significant impact on the landscape occurred in the Neolithic period, when tree clearance was carried out to facilitate crop production and animal husbandry. This began a process that led to the transformation and occasionally (the Burren is exceptional) the degradation of large tracts of land, resulting in much of the current landscape. The Burren that we see today is not simply a geological landscape, it is a reflection of the activity of people. Pollen analysis² has demonstrated that much of the Burren had a healthy woodland cover, which developed as the ice sheets retreated northwards at the end of the last ice age (c. 10,000 BC).

The prehistoric landscape has many hidden attributes that we are only just beginning to recognise, albeit often with incomplete understanding as to original form or function. Of these landscape elements, ritual or monumental landscapes have received more attention than most, primarily due to the survival and visibility of upstanding megalithic tombs. The Record of Monuments and Places (RMP) for County Clare records examples of two of the three megalithic tomb-types normally ascribed to the Neolithic period: court tombs (four examples), which are generally regarded as the earliest, and portal tombs (four examples).³ The most famous of these is at Poul nabrone on the Burren, where the remains of at least twenty-two individuals were excavated in the 1980s. A common feature of Neolithic tombs is that they

1 Limited evidence from Co Clare is mostly in the form of stray finds such as stone axe heads (e.g. Noonan, NMI 1942:159)

2 At Gortlecka and Rinnamona, to the north-east of Kilnaboy, and in the Carron Depression (Waddell 2001, 60).

3 The traditionally classified 'court' tomb at Parknabinnia (CI 153), on Roughan Hill, has recently been described as a 'chambered tomb', and architectural similarities with the two nearby court tombs at Leamaneh North (CI 135) and Ballyganner North (CI 34) suggest that these may represent a 'regional variety of megalithic tomb' (Beckett and Jones 2002, 5).

were sited in particular and recurring locations (ibid 91). Cooney suggests that this repetition of location, construction and use over time 'provided communities with memories and histories' (ibid 92). It also serves as a reminder that, in the modern landscape, areas now marginal for farming and habitation were once significant social, political and economic regions.

There are also hidden indicators of human activity in the landscape, such as stone axe artefacts. Many of these have been recovered from riverbanks, most notably from the River Shannon at Killaloe, which was an important crossing point throughout prehistory, as it is in modern times. It would seem that at least some of these axeheads were deposited as votive offerings, or that they represent good-luck charms deposited at the point of crossing. While lakeside settlement does not seem to have been as important in the Mesolithic and Neolithic as in later periods, there is still significant evidence for such sites (O'Sullivan 1998), although the legacy on the modern landscape remains subtle.

2.3.4 *Bronze Age (c. 2500-600BC)*

During the Bronze Age, the Irish landscape underwent fundamental change: the growth of blanket bog accelerated, soil deterioration became more widespread and forest cover was radically reduced (Cooney and Grogan 1994). In County Clare, the end of the Neolithic and beginning of the Bronze Age is marked by a phenomenal increase in the number of megalithic structures, in particular wedge tombs, which are traditionally dated to the Bronze Age. To date, 133 examples are recorded in the RMP and that figure has presumably been revised upwards in the course of the fieldwork for the archaeological inventory. The concentration of wedge tombs in the Burren is the densest clustering of tombs in Ireland and, even allowing for the possible greater survival of monuments, suggests an extensive use of the surrounding uplands into the Bronze Age. For example, in the townland of Parknabinnia, north of Kilnaboy, there is a roughly linear scattering of eleven wedge tombs within some 200 metres of each other (Waddell 2001). Cooney and Grogan (1994) suggested that clusters, such as these, should be considered as cemeteries rather than as isolated monuments.

The Bronze Age also saw the introduction of *fulachta fiadh*, or burnt mounds, which are generally regarded as indicators of communal feasting or (possibly) bathing around boglands and lakeshores. Expanding mobility and communication is evidenced by Bronze Age coastal shell middens and by the trackways across boggy land and mudflats, such as those recorded on the Fergus estuary (O'Sullivan 1998).

During the Bronze Age, the use of riverine, lacustrine and estuarine locations in Clare seems to have increased significantly. Ritual deposition of artefacts (mostly gold and bronze objects) into lakes, rivers and bogs became a common feature of the Late Bronze Age (Grogan 1999). In south-east Clare, deposited hoards have been recovered at several sites including Lahardaun, Enagh East

and Durra, (ibid), with the largest collection of prehistoric gold objects in western Europe found on the edge of Mooghaun Lough (c. 1km north of Mooghaun hillfort) in the nineteenth century.

More significantly, Bronze Age settlement sites have also been recorded at waterside locations. There is an association between Bronze Age enclosures or farmsteads on exposed rocklands or limestone outcrops, defined by a low stone kerb enclosing an area about 20m in diameter, and field systems on rockland terraces overlooking lakes, bogs and coastal marshes, e.g. Ballycar Lough and Ballynacragga overlooking the Fergus estuary (O'Sullivan 1998; Grogan 1999). Grogan (1999) notes that these enclosures often occur in clusters, probably representing kin-groups, within systems of small and large fields. In light of the relatively rich material retrieval from Bronze Age lakeside settlements, O'Sullivan (1998) suggested that lakeside settlements may have been more prestigious than their dryland counterparts and that there may have been a defensive advantage to lakeshore settlements.

There is considerably more settlement evidence for the later Bronze Age in Clare and much of our knowledge of this period comes from the Mooghaun region of south-east Clare¹. Mooghaun hillfort lies at the centre of the region that it is likely to have dominated in the Middle Bronze Age to Iron Age Period. It occupies the entire hill and prior to the current vegetation (predominately birch woodland planted in the last century), would have had extensive views of the surrounding landscape, including the Shannon estuary and the River Fergus valley and estuary.

Grogan (1999, 18) refers to the area surrounding the hillfort as a 'chiefdom' and suggests that the occupants of the fort may have controlled an area of about 450 square kilometres (ibid). The chiefdom may have dominated the territory west of the Broadford Gap, an important communication and trade route through the Sliabh Bernagh Mountains leading to the prehistoric ford of the River Shannon at Killaloe (ibid). In the immediate vicinity, families would have farmed extensive areas of land, including areas within the hillfort itself, with the land divided into fields by stone walls, fences and hedgerows (ibid). Further away from the enclosed settlement sites, the land would have been less intensively managed, perhaps with some woodland management (for building materials and firewood) and open rough grazing. Seasonal pasture would probably have been sought further from the sites again, along the margins of the tidal estuaries of the rivers Shannon, Fergus, Rine and Owenogarney/Ratty and in upland areas on the fringes of the Sliabh Bernagh Mountains and the Cratloe Hills (ibid).

Through the investigations at Mooghaun, Bronze Age management of the landscape can be assessed with a considerable amount of detail. Once again, the importance of communication routes and the availability of resources in

¹ Initially excavated at Knocknalappa in the 1930s and more recent the subject of a Discovery Programme Project (see O'Sullivan 1998, and Grogan, 1999)

the landscape are shown to have been of central significance to the communities during this time. The hill fort remains a key landscape feature around Mooghaun and the strategic importance is reinforced by the long views afforded from the summit of Mooghaun.

2.3.5 *Iron Age (c. 600BC-AD500)*

The Iron Age in Ireland is poorly understood and much of the archaeological evidence for the period is confined to ceremonial sites and metalwork that is largely unprovenanced (O'Sullivan 1998). One of the characteristics of the Iron Age across Europe, which seems to have been replicated in Ireland, is the deposition of weapons and metalwork in rivers, lakes and other water places (ibid). In County Clare, a La Tène iron horsebit and iron spearhead were recovered from Inchiquin Lake, where wooden piling was also recorded on the lake foreshore (ibid).

Sometime around AD 200-300, there seems to have been a significant expansion in agriculture, as suggested by the palynological evidence (Stout, 1997), which was assisted or caused by the introduction of a new agricultural technology. Subsequently there was an increase in population and settlement, and the references to woodland clearance begin to increase from about AD 800 (Clinton 2001).

2.3.6 *Early Historic (c. 500-1170s)*

As elsewhere in Ireland, the Early Historic landscape in County Clare is represented by ringforts, stone enclosures, cashels, crannogs and early monastic settlements. Although the RMP for County Clare records only 224 ringforts or 'raths', it also identifies a staggering 2,819 sites simply as 'enclosures'; these are generally circular features identified from the Ordnance Survey maps, and it is likely that a large number of them actually represent ringforts or sites with a similar function. The RMP also lists 316 cashels, or stone forts, which are generally considered as contemporaneous with the earthen raths.

There is increasing evidence to suggest that the large, co-axial field systems often associated with the cashels and ringforts on the Burren plateau may be contemporary with the forts (Gosling - 2001). Field systems of indeterminate dates have been investigated in recent years in County Clare (e.g. 'mound' walls at Coolnatullagh in the Burren [Eogan - 1998], and in the townland of Carrigoran as part of preparations for the Ballycasey, Dromoland Bypass, in the south-east of the County (Reilly - 2000 a and b). Further work on early historic field systems is ongoing in Burren.

Stout (1997) identified spatial associations between ringforts and early ecclesiastical sites, reflecting the diverse and secular nature of the early church in Ireland (O'Sullivan 1998). The earliest church settlements were small and simple. Larger settlements were strategically situated on major routeways,

along roads, or at riversides. In addition to their religious function, monastic settlements were likely to be involved in significant levels of trade and communication and early Irish laws frequently mention the use 'of the plough and draught animals and the construction and ownership of horizontal watermills for grinding grain' (ibid 102-3).

Off the east shore of Lough Derg, 2 km south-west of Mountshannon, *Inis Cealtra* is one of the most important early historic ecclesiastical sites in the country. The monastic settlement may have been founded by St Colum of Terryglass (County Tipperary), or by St Caimin in the sixth century (O'Sullivan 1998). Large earthwork enclosures on the island are thought to represent later mediaeval pilgrimage activities near the site (ibid). Pilgrimage activities on *Inis Cealtra* were particularly active from the seventeenth to mid-twentieth century at Whit Weekend. The unusual bargaining stone remains a location where marriage vows are renewed and the island continues to be used as a burial ground. This provides a continuous link to the ritual use of this island in this part of the county.

Lake monasteries such as *Inis Cealtra* should be regarded as having an important function in early historic and Viking Age settlement organisation, being centres of farmed estates, ecclesiastical authority and secular pilgrimage. They managed their own agricultural lands, presumably with tenant farmers and settlements scattered in the landscape around the lakes. They also served as important centres for communications, as hostels for travellers up and down the rivers and lakes, and as proto-urban markets or redistribution centres for local and regional products. (O'Sullivan-1998).

Holy wells represent an historic landscape feature that is still functional in modern Clare, perhaps more so than elsewhere in the country. Some 226 examples are recorded in the RMP. While their dates of establishment might vary considerably, some examples are documented from as early as the seventh century (O'Kelly - 2002, 25). It is generally believed that holy wells were 'Christianised' from pagan origins, and while their earlier history is ambiguous, there is growing evidence for holy wells as indicators of ritual or cult elements of the Irish Iron Age (ibid). O' Kelly suggests that their survival into Christian times may represent a general survival of 'a widespread and very ancient water cult'. Many wells are located beside or near early mediaeval monasteries and churches (ibid) and have been incorporated in ritual 'patterns' still observed today.

Although there is scant evidence for Viking, or Hiberno-Norse, occupation in County Clare, the effect of their arrival in Ireland was evidenced in changes in the old Gaelic or tribal dynasties. The Hiberno-Norse introduced two major concepts to social organisation in Ireland: urban life and trade (Otway-Ruthven, 1980). Prior to their arrival the only effective country-wide organisation was the church, but the Hiberno-Norse introduced an element of

insecurity that demanded a more structured form of power, protection and defence amongst the Irish.

Towards the end of the tenth century Brian Boruma, king of the Dalcassians of County Clare, seized the monarchy of Tara and became the first High King of Ireland (ibid). The position was not effective and conferred no real powers on Brian outside of his own *tuath*, but it initiated a lineage of O'Briens who were considerably influential in shaping the history of Munster in the centuries to come. In landscape terms, St Cronan's Church in Tuamgraney, adjacent to the later tower house, was said to have been renovated by Brian Boruma in 1000, and his fort, just one mile from Killaloe, whilst being subject to later uses, remains an important historical element in the landscape of Lough Derg and east Clare.

2.3.7 *Mediaeval Clare (c. 1200–1540)*

The history of mediaeval Clare is largely a history of the O'Briens and the de Clares. The former succeeded the Dalcassians as kings of Thomond (*Tuath Mumhan*, meaning North Munster). When the Anglo-Normans penetrated Clare in the late thirteenth century, they inflicted heavy defeats on the dominant O'Briens (Lewis, 1837), but the O'Briens remained a constant thorn to the Anglo-Norman and later English settlers in Munster. In the mid-fifteenth century Tadhg Ó Briain (king of Thomond 1459–66) extended his territory into adjoining parts of counties Limerick and Tipperary. In 1543, Murrugh O'Brien became the first earl of Thomond and Baron Inchiquin. After the Restoration (1663), Daniel O'Brien became Viscount Clare. With a few notable exceptions, the O'Briens firmly supported Protestant succession in the county, and subsequently survived as one of the few Gaelic families to become part of the eighteenth century landed elite.

The twelfth century saw the introduction of monastic orders from continental Europe, which were to have a significant impact on the organisation and management of the landscape within the county. The Cistercians were the first to arrive in Ireland and had established thirty-three monasteries by 1230. Corcomroe Abbey is a good example of a Cistercian monastery in County Clare. Cistercians played a significant role in agricultural development and divided monastic lands into farms or granges. They also modified the landscape considerably, clearing woodlands and reclaiming wetlands. Their preference for richer, freely draining soils better suited for cultivation remained throughout the Norman period ¹.

Other monastic sites that remain in the contemporary landscape include the Augustinian church at Canon Island and Clareabbey; patronage under the Normans, led to an increase in Augustinian monasteries up to the fourteenth century. Quin Abbey, one of the most renowned ruins was founded by the Franciscan order.

¹ Aalen, Whelan and Stout, 1997.

Remnants from the mediaeval period in County Clare are amongst the most impressive features of the landscape. Bunratty Castle, built by Thomas de Clare (d. 1287), is redolent of the late thirteenth century in Clare, when de Clare struggled to retain control over Thomond. It also has metaphorical links with different parts of the landscape as de Clare's son, Richard, died at the battle of Dysert O'Dea in 1318, marking the turning point in the Anglo-Norman hold over Thomond.

In the later mediaeval period, tower houses became popular in the Gaelic-held areas of Clare. There is a particular concentration of these in the east of the county and they are often associated with the O'Briens. Although they have a defensive function, in many instances in the county, the building of tower houses had more to do with neighbouring families and maintaining status than strictly defensive operations¹. However, they remain a strong landscape feature within County Clare. Their predominance is evidenced through the high numbers that remain in private ownerships, sometimes located at the rear of farm yards or hidden by vegetation along the River Shannon and in the loughlands of east Clare.

2.3.8 *Post-Mediaeval period (1540-1700)*

When Connaught was divided into six counties (1565), Thomond was made 'shire ground' and named Clare, after its main town, Clarecastle. The county was reassigned to Munster in 1602.

The late sixteenth/early seventeenth century saw the final phase of large-scale woodland clearance for 'strategic, industrial and settlement purposes' (Smyth, 2000). It was also during this period that the county experienced what Smyth calls 'the county shiring system'. County towns were developed around previous lordship strongholds, and these were established primarily as administrative centres. Garrisons, assize courts, jails, session houses etc, were established to facilitate local government (ibid 165). Later in the seventeenth century, the Cromwellians reconstructed and reorganised the social and political components of county towns (ibid).

By the early seventeenth century, Ennis had become the principal urban centre in County Clare. It had developed around the Franciscan friary, which was established c. 1240 by Donough Carbarac O'Brien (or Donchadha Cartbreach O' Brian), King of Thomond. Patronised by the princes of Thomond, the settlement prospered so that by 1375 the monastery was a thriving centre of learning (Harbison, 1992). Exceptionally, the friary survived the Dissolution of the Monasteries (in the mid-sixteenth century), protected by Murrough O' Brien, and was the scene of the formal abolition of the old Irish Brehon Law in 1606 (ibid). In 1609, Ennis received its first market and fair grant, and in 1612 'the town of Inish' was created as a borough (Lewis, 1998, 41.).

¹ Dr Pat Nugent, pers comm.

The shiring of Thomond signified the extension of new English administration to a part of Ireland that had previously remained largely outside direct English jurisdiction. The accompanying legislative changes to property ownership and inheritance and the exposure to direct market forces resulted in significant changes to the organisation of the rural landscape. Most of the former clan chieftains became land magnates (landlords) with their allies and lesser kinsmen becoming the owners of moderate sized individually owned farms. In order for these farms to be economically viable, they had to ensure a steady supply of surplus produce to the newly constituted fairs and markets of Ennis and other sites such as Kilmurray McMahon, Quin, Clare and Sixmilebridge etc.

Only those Gaelic land magnates and freeholders who consolidated their holdings into compact viable sized estates or farms, instead of dispersed holdings, and who adopted modernising farming methods, were able to survive in this changing socio-economic environment. Some of the leading O'Brien landlords introduced new English and Dutch tenants to the more profitable parts of their respective estates. This resulted in localised landscape transformation. In these areas, field boundaries became more plentiful, permanent and more geometric in nature. Intensive tillage production also made an impact on the landscape. Nevertheless, cattle production was still the dominant agricultural enterprise.

As the seventeenth century progressed, and particularly after the Cromwellian transplantation scheme, the estate system spread throughout most of the populated, good to moderate lands of the county. Most of the major landlords were now either Cromwellian soldiers or new English administrators or speculators. However, a significant minority were 'Innocent Papists'. The more successful landlords began to modify their existing towerhouses and built new 'Big Houses'.

These landlords generally relocated their tenants in estate towns and villages that lay immediately outside the demesne walls. Examples of these include Kilrush, Newmarket-on-Fergus, Corrofin, Sixmilebridge, Tuamgraney and Mountshannon. However, the modernising effect of the estates on the landscape was dependent on the disposition of the resident or absentee landlord. The general pattern was one of alternating periods of effective and ineffective management. Consequently, apart from the core areas of most estates, traditional patterns of land management endured throughout much of the county. The subsequent enclosure of these areas into the stereotypical rundale field patterns was a more organic outcome of the continued rural population growth from the mid-eighteenth century onwards.

2.3.9

Landownership and Change - 1700 up to the Famine

The 1660 restoration of land and the accession of James II to the British throne in 1685, raised hopes that some degree of Catholic emancipation might ensue.

However, in the late seventeenth century a series of laws were introduced to finally suppress the Catholic religion. The laws, which became known as the penal, or popery laws, prevented Catholics from running schools, being educated abroad, joining the army, practising law or holding office in central or local government.

By the end of the seventeenth century, some fifteen per cent of the profitable land in Ireland was in the hands of the Catholic gentry and these were the main targets of the penal laws. Additional measures were introduced at the beginning of the eighteenth century to finally suppress the Catholic faith; this had the effect of transferring property remaining in Catholic ownership to the new Protestant ascendancy or elite. In 1704, the Act to Prevent the Further Growth of Popery prohibited Catholics from buying or inheriting land from Protestants and limited the period of Catholics' land leases. The 'One Mile Rule', which prevented Catholics from owning land within one mile of the coast or estuary, can still be seen in the legacy of large houses, frequently with designed landscapes, particularly along the Fergus estuary. One such example is Ballanagard, close to the Fergus estuary.

The mid- eighteenth century saw the introduction of large-scale designed landscapes, where landlords carried out 'improvements' to their land, digging ditches and constructing banks that were then topped with hawthorns, and laying out new field boundaries (Mitchell and Ryan - 1997). Of the designed landscapes within the county, Dromoland Estate, the seat of the O'Briens, was the highlight and the prototype to which other landowners aspired¹. A contemporary description from the 1820s provides an indication of the grandeur of the estate ²:

'We very soon reached the beautiful lodge and entrance to Dromoland...The lodge is one of the best taste and grandest execution we have seen, well suiting the grandeur of Dromoland. From thence the avenue sweeps through extensive grounds and woods to the house. This venerable mansion stands on a gentle eminence, surrounded by noble trees, and overlooks a large and beautiful lake beneath the windows.'

The number of demesnes, especially those with mediaeval roots, demonstrates settlement continuity. There are few significant estates in the western half of the county, with the exception of Kilrush (Vandeleur's), Liscannor, Lahinch and Ennistymon – but a band of landscape parks of over 4ha occurs throughout the eastern half and cluster around Ennis and the Fergus estuary.

From the late eighteenth century forests, were cleared at 'an alarming rate for use as fuel', so much so that by the mid-nineteenth century the country was said to have looked like a desert (McAfee - 1997), except within walled estates.

¹Pat Nugent, pers comm

²J. Trotter, A Walk through County Clare, 1817 in Brian O'Dalaigh (ed)1998

Mitchell and Ryan (1997) highlight the irony that while the woodlands were being cleared, landlords were busy cramming their estates with trees.

In north-west Clare, the situation was somewhat different to the rest of the county. The pressure of a growing population forced people onto even the most unproductive land: hillsides, boglands and old upland pastures (ibid). The Burren region was not the most attractive land for the new Protestant elite and several Gaelic families, including the O'Briens, retained their estates in the area (ibid). In 1732, at the height of British power in Ireland, the Burren was the most 'undisturbed barony in the whole island' (Whelan, 2000).

In the early to mid-eighteenth century, the Rundale system of open farming flourished, particularly in the west of the country (McAfee, 1997). Under this system, an extended family group living in *clachans* or groups of houses cultivated plots of ground separated by a strip of land rather than stone walls. These parcels of land were often spread over a large area, each one being quite small. As the population increased, the productivity of this system became untenable as the system of inheritance divided the available land into smaller and smaller plots.

2.3.10 *Pre-Independence Period*

Expansion of Towns and Villages

Although Lisdoonvarna wasn't even identified on the 1840s Ordnance Survey map, within a few decades it had developed into a popular resort, largely on the exploitation of the sulphur waters and the promotion of its spa.

Ennistymon is a good example of a medium-sized market town demonstrating continuity of settlement. It is a planned town that developed as a market town in the nineteenth century. The name was first documented in 1422 as 'Inisdymon', a moated ford and associated dwellings (MacCurtain - 1994). During the medieval period, it is thought to have been the location for St Luchtighern's monastic settlement (ibid). Today, the Falls Hotel incorporates Ennistymon House, a Georgian mansion built by the former landlord, on the ruins of an O'Brien castle. Some time after 1703 the castle was renovated as a Georgian mansion. The mansion was home to the MacNamaras, whose 18,000-acre estate included the town in the nineteenth century. The earlier settlement in the area is still visible today in the ruins of the castle, mill, river and dwelling houses (ibid).

In the nineteenth century Ennistymon expanded in response to the 'demands of the agricultural economy of its hinterland' (ibid 111). The town was a busy trading post for horses and heifers. By this time cattle were being brought from the midlands to be fattened on the pastures of east Clare. Ennistymon became the centre for markets in eggs, potatoes, oats and, after the mid-1800s, for large quantities of butter (ibid).

Kilrush developed as a busy market-town and harbour in the late eighteenth and early nineteenth century. It was part of the vast Vandeleur estate and owed much of its prosperity to the family, whose residence was at Kilrush House.

Communications

Prior to the establishment of county grand juries by legislation in 1765, local road improvements were carried out on a parish-by-parish basis, which obliged each parish to raise sufficient funds for the maintenance of roads within the parish boundary. Thereafter, the county grand juries were responsible for financing, managing and extending the road and bridge network within the country. These bodies were able to raise funds through taxing the baronies through which the proposed road was to run. As these juries were composed of local landowners and were an unelected body capable of imposing taxes, contemporary opinion was highly critical. From 1817, their remit was altered to only consider proposals that had initially been assessed by local justices of the peace. Nonetheless, this system led to the creation of an extensive road network within Ireland prior to the disbandment of the juries in 1898.

Many of these roads are identifiable in the current landscape due to their straight alignment, disregarding physical features such as poorly drained soil. Furthermore the influence of local landlords on the design of the roads is reflected in their orientation around, not through local estates. Agricultural improvements and dispersal of farms during this time ¹, also led to an increase in access lanes, a network of which remain throughout the Clare landscape and are known now as bohereens. A considerable number of bridges were also constructed during this period, ranging from small masonry structures crossing streams to considerable arched bridges over six feet in span, such as the Shannon crossings at O'Briensbridge and Killaloe. The characteristic small classical round-arched stone bridge, finely constructed of ashlar and cut-stone blocks, is another continuing feature of the Clare countryside (see the National Inventory of Architectural Heritage (NIAH), e.g. Blackweir Br 20405629 NIAH).

The defence of major sea routes during the Napoleonic Wars included monuments of national architectural significance at Finavarra Point Martello Tower (20400205 NIAH) and Kilkerrin Fort (20406805 NIAH) and others of lesser architectural merit but which still mark the seascape (e.g. Kilcredaun 20407202 NIAH).

The appointment of the Drummond Commission in 1836 to design a railway system for the country was the impetus for a considerable rail construction programme. Within Clare, the Limerick to Ennis line was operating by 1860, and the narrow gauge railway of West Clare was built between 1884 to 1892,

¹ See Aalen, Whelan & Stout, 1997 for further discussion

running from Ennis to Lahinch to Moyasta junction, where it split serving Kilkee and Kilrush. By 1923, the north of the county was served by the Ennis Athenry line, which served Crusheen and Tubber.

Canal construction was not a significant feature in the county, with the Killaloe-Limerick canal being the sole canal. At its height, over forty barges a week travelled through the ten loughs to Killaloe. The canal was terminated in 1929, due to the diversion of waters for the Ardnacrusha hydro station.

All these constructions had an impact on landscapes within the county, through increasing access for produce and allowing speedier movement of peoples within the county. Perhaps most notably, the linear and obviously manmade design of these transport routes were the key landscape impacts, imposing a human rationale on the landscape on a scale previously unseen.

Famine and Agricultural Reform

Population expansion combined with the success of the potato up to 1815, was followed by a relatively abrupt depression, resulting from a variety of factors including the decline of agricultural prices. This resulted in an explosion of shanty cabins on edges of towns and people trying to eke out a living as they were increasingly pushed onto marginal land. All of these factors led to an over reliance on the lumper potato, combined with no contingency resources either socially or economically to address the series of wet summers and subsequent infection by blight and failure of the potato harvests.

The blight destroyed over 90 per cent of the potato crop, its impact being most severe in counties in the west of Ireland such as Clare where there was a high dependency on the lumper variety of potato. Moreover, the famine particularly affected the marginal settlements associated with the rundale and clachan system, where the dense settlement facilitated the spread of disease within an already weakened population. By 1847, over 60 per cent of the population of Clare were taking up rations of food.

As a result of the famine, and the associated unsympathetic relief policies, death, disease and emigration spiralled. Its consequences are most starkly represented by an analysis of pre and post- famine populations. The population of Clare fell from 286,000 in 1841 to 166,000 in 1861. The thousands of famine victims were buried in the small famine graveyards that were established throughout the County and remain in the landscape as a poignant reminder of the suffering endured.

The policy approach to the famine was informed by an initial desire to rid the Irish system of its perceived backwardness and obstacles to agricultural modernisation. Hence, in particular, small farmers were targeted and through the ratings clauses, massive numbers of smallholders were evicted. The rundale and clachan system was also determinedly targeted 'in the belief that only individual farms would encourage initiative and self-reliance' (Aalen et

al, 1997, 90). This massive clearing of the land, combined with the introduction of ladder fields as a means to rationalise land ownership, removed many of the earlier field systems within the county. Accompanying developments that had a great landscape impact were the overwhelming increase in pasture at the expense of tillage and the consolidation of large scale ranchers who tended to rent the limestone rich pastures, whilst the remaining farmers most frequently had to contend with producing on marginal land.

The Congested Districts Board (CDB) was established, in 1890, to relieve congestion and ameliorate poverty in the west of Ireland. The board was responsible for 'breaking up and re-ordering thousands of rundale house clusters and intricately meshed fields and gardens' (Duffy 2000, 217). The new 'striped' or ladder fields often led from newly built roads, accompanied by road-side houses (ibid 217-8). The dispersal of farms was continued, and much of the board's expenditure related to drainage, fencing, road construction and the improvement or construction of housing. The CDB houses and remodelled land holdings remain a key landscape feature in the county, with the exception of the southeast and Ennis areas, which were not classified as a congested district.

A combination of declining numbers of landlords, in large part due to the increasing assertion of agrarian rights and a less sympathetic governmental regime, resulted in many landlords transferring their land to former tenants with a consequent decline in the extent of many estate holdings. The War of Independence, and the Civil War that followed it, also led to many perceived symbols of the landlords' reign being burned down, such as Fort Fergus, home of the Ball Family, close to Ballanacally. In addition, a number of buildings associated with British rule, such as Royal Irish Constabulary barracks, were destroyed during this period.

The Land Commission, formed under the Free State in 1922, continued and concluded the work of the CDB and had quite extensive powers to prevent the subdivision of a farm if this risked creating an uneconomic farm holding. The Commission was abolished in 1992.

2.3.11 *Twentieth Century Post Independence*

Following independence, land reform is thought to have contributed to an increase in the division of land as former tenants sought to define the boundaries of their newly acquired freeholds. Economic stagnation ensured that emigration continued apace, with the county recording a 21% decrease in population between 1926-1961.

The introduction of rural electrification and group water schemes had both social and landscape impacts in County Clare, with significant improvements on the quality of life for rural householders, as well as the introduction into the landscape of water treatment facilities, reservoirs and electricity poles and pylons.

Rural electrification was achieved, in part, through the development of the Shannon Hydro- Electric Scheme, which utilised the fall in level between Lough Derg and the Shannon Estuary, and involved the construction of a weir and intake near Parteen Villa, head-and-tail race canals spanned by four bridges and a power station at Ardnacrusha. The scheme, started in 1925 and formally opened in 1929, introduced a new linear waterway (and associated crossings, retention banks etc) to the area and led to the relocation of St Lua's Oratory from Friar's Island to the grounds of St Flannan's Church at Killaloe as well as the flooding and division of farmsteads and land holdings.

The economic emergence of Ireland over the last forty years, particularly following the opening up of Ireland to multi national companies in 1958 and the state's entry into the EEC in 1973, has had a profound influence upon the social, economic and physical development of County Clare. Within the county, and to a certain extent within the west of Ireland, this process was spearheaded by developments in the Shannon Area. Initially, Shannon Airport had a considerable advantage, providing the first suitable landfall for transatlantic traffic. However, with technological improvements, this position was not guaranteed and hence the establishment of the Shannon Free Zone in 1959, the worlds first duty-free industrial zone. It has attracted a wide range of international services, companies and manufacturers. In addition, the planning of the new town of Shannon since the 1950s has been a test ground for modern town planning theories, in line with contemporary State developments such as Tallaght. Shannon is currently undergoing a revived programme of planning and development. This area has undergone considerable and extensive landscape transformation over the past half century.

With the entry of Ireland into the EEC, agricultural change has been vastly accelerated. A well organised and united domestic farm lobby has been successful in maximising the assistances available through the Common Agricultural Policy, thereby improving the productivity and profitability of the agricultural sector throughout the state. Greater investment has also led to the intensification of farm production methods and a significant expansion in the mechanisation of farm activity; these developments have often resulted in the creation of larger, more intensively fertilised, fields and large scale farm outbuildings to facilitate both arable machinery housing and maintenance and intensive livestock regimes.

More recently, with the introduction of schemes such as the Rural Environmental Protection Scheme (REPS), an attempt has been made to explicitly link farming activities to the environment. In County Clare there have been 2,279 participants in REPS involving 82,354 hectares of land. However it remains to be seen how successful the second REPS programme will be, as anecdotal evidence suggests that the uptake is now lower than the initial programme.

Associated with the changes in the agricultural sector within the County, is an increase in part time farmers and the accompanying decline in farm employment. This loss of labour is often particularly acute with regard to the traditional maintenance and management of key agricultural landscape features such as hedgerows and ditches.

With the increase in economic activity nationally, County Clare has also seen a significant rise in planning and development activity. However, much recent development is spatially unbalanced, in part due to nationally framed policies. For example, a number of tax schemes, such as the Seaside Resort Tax Incentive, have led to a considerable expansion of unsympathetic housing and apartment styles along the vulnerable coastline of west Clare. Planning applications within the county have risen considerably with 2,000 applications granted for dwellings between 1990 and 2000 in the South Economic Corridor alone.

Whilst the county retains a rural landscape, the pace of change over the past thirty years, in landscape and social terms, has been considerable. Although parts of the county are under considerable development pressure in the form of housing requirements, other parts are suffering continuous population decline and associated loss of rural services. Human activities will continue to play the most influential role in landscape retention and change, whether through the continuation of agricultural decline, or the exploitation of natural resources such as limestone quarrying or large infrastructure projects.

2.4

READING THE HISTORIC LANDSCAPE

The chronological description of human activities in County Clare, presented in the sections above, has focused on the means by which past individuals or communities have exploited, changed and adapted their physical environment. The extent to which the current landscape reflects these activities is a function of the contemporaneous social, cultural, economic and technological contexts within which human activities were undertaken and, most importantly, the extent to which the physical consequences of these activities have survived as discernible elements within the present day landscape.

However, our ability to discern these elements, to *read* the historic landscape, is highly variable. For example, the remnant prehistoric landscape of the Burren can be identified on the ground with relative ease due to the survival of major upstanding prehistoric elements (megalithic tombs, field boundaries etc). The continuity of landuse management practices over the past several millennia have ensured that, although the prehistoric elements may have been extended or supplemented, the original prehistoric landscape can be identified and understood by even the most casual of observers. Similarly, there are sufficient surviving mediaeval landscape elements in those lands southeast of Ennis that a well-informed eye may visually reconstruct the major elements of

the landscape of the mediaeval period through study of the landscape remnants that survive.

The survival of sufficient intact and *readable* remnants that allow past, single-period landscapes to be identified is, however, an exceptional occurrence. Landscapes, unless profoundly altered by modern developments, are typically multi-period creations with intermingling layers of historic influence and surviving elements; some landscapes may retain visible elements that range from prehistoric megalithic monuments to early Christian structures and from mediaeval estate boundaries to nineteenth century enclosures. Complexity is amplified through the continuous adaptation and reuse of landscape elements that may reflect changes in function, cultural significance or patterns of ownership. In some instances, historical processes have directly affected the landscape, through the removal or alteration of features, with the additional, indirect effect of removing or masking the context of surviving, related elements. Under such circumstances, modern day attempts at reading and interpreting the historic landscape must rely upon conjecture, albeit in some instances such conjecture may be informed through the study of similar, better preserved landscapes elsewhere in Ireland or overseas.

Therefore, in defining and applying historic landscape character assessment to the modern surviving landscape, it is acknowledged that the validity and accuracy of any analysis of the historic landscape will be constrained by available information regarding the historical developments and events that have shaped the landscape. This presents the major difference between historic landscape assessment and the wider process of landscape character assessment:

- Landscape character assessment seeks to assess, analyse and characterise landscape from the perspective of the present-day visual qualities of the countryside. Historic landscape assessment, which can be viewed as a process of enrichment and refinement of landscape characterisation rather than as a separate or alternative approach, places emphasis on the layers of chronology and the visual indicators of different historical patterns and rates of change.
- A further difference between the two approaches is that historic landscape assessment requires greater desk-based research, using written documentation, archives and records, maps and air photographs, whereas landscape assessments are built upon field-based visual appraisal and interpretation. This 'vertical' rather than 'horizontal' perspective is likely to produce explanations of the historical context of landscape elements, which are not visible to the contemporary observer. The results of historic landscape characterisation and assessment are validated with reference to historical determinants and may be used to improve our ability to read the historic landscape.

The integration of this historic perspective into the wider landscape character assessment provides an opportunity to deepen the characterisation process, incorporating an understanding of patterns of change and of the contribution of remnants and relics to the living landscape. Not only does such an approach provide a means for understanding the evolution of landscape and the likely consequence of change upon the landscape resource, it also provides an opportunity for the development of an integrated approach to countryside and heritage management.

The integration of historic landscape assessment within the wider landscape character assessment is presented in the subsequent Chapters of this report.

3.1 INTRODUCTION

In this chapter, the landscape character types (LCTs), which were outlined in Chapter One, are discussed in more detail.

The pilot County Clare Landscape Assessment Study identified seventeen different LCTs through a process of both GIS and manual analysis. One of the aims of the pilot study was to compare the usual manual overlay technique with a more robust computer-based approach. By carrying out fieldwork during the course of the current project programme, the team was essentially testing the robustness of the pilot study's findings against conditions in the field.

A definition of LCT is provided once more in the box below:

Landscape character types are distinct types of landscape that are relatively homogenous in character. They are generic in nature in that they may occur in different localities throughout the county. Nonetheless, where they do occur, they commonly share similar combinations of geology, topography, land cover and historical land use. For example, limestone river valleys or blanket bog uplands are distinct landscape character types and are recognisable as such whether they occur in County Clare or other counties.

3.2 IDENTIFYING LANDSCAPE CHARACTER TYPES

The team took as its starting point the previous LCT boundaries identified in the earlier study. In addition, GIS analysis was used to further assist in the verification of the LCTs and their boundaries. Following the fieldwork, two further datasets were added to the GIS – surface geology and glacial deposits.

Furthermore, the team was of the opinion that identifying principal drivers for each LCT would also assist the GIS analysis and improve LCT identification at national level. *Drivers* are considered to be the principal physical influences that lead to the creation of different LCTs. For example, in some LCTs such as limestone pavement, geology and hydrology may be considered the principal physical influences. Other LCTs, such as low drumlins, may be largely influenced by the glacial processes that occurred within the area.

However, in practice and as will be illustrated shortly, many of the drivers remain similar if not identical for each LCT and thus universal landscape drivers may be identified, comprising topography, geology and land cover. This reflects current guidance at national and European level recommending the identification of LCTs principally in terms of land cover and landform ¹.

(1) Landscape and Landscape Assessment, consultation draft of Guidelines for Planning Authorities, 2000, Department of the Environment and Local Government.; Making sense of Place. Landscape Character Assessment Guidance. 2002. Countryside Agency

In this report, the team has used the term *Landscape Character Types*; this term is increasingly being accepted internationally as standard nomenclature and corresponds to what the national draft guidelines refer to as *Physical Units*.

Habitat Types

Following a request from Clare County Council, the team agreed to identify principal habitat types at survey points over the course of the fieldwork.

A definition of a HT (habitat type) is provided in the box below:

A **Habitat Type** is described as the area in which an organism or group of organisms lives, and is defined by the living (biotic) and non-living (abiotic) components of the environment. The latter includes physical, chemical and geographical factors, in addition to human impact or management.

The aim of this exercise was to produce an indicative habitat map of the county using the point sources habitat types and the Corrine land cover used in the GIS. The classification used by the team was the Heritage Council Guide to Habitats (Fossit, 2000).

It must be stressed that this is not a comprehensive habitat map, nor indeed was detailed habitat identification undertaken as part of this scope of work. Nonetheless, it is intended that the output map and data will provide some initial baseline information on habitats within the county. *Table 3.3* lists the habitat types according to the above guide.

3.3

IDENTIFYING HISTORIC LANDSCAPE TYPES

The second part of this chapter presents in more detail the historic landscape types, which have been developed from those identified in the pilot study. The analysis and definition of historic landscape types has been advanced in the work to date through:

- additional datasets being added to the GIS;
- broad-brush fieldwork within the county;
- an initial analysis of the relationships of the HLTs;
- preliminary regression analysis of key features such as the dating of roads;
- an assessment of intervisibility between key historical features;
- the identification of pressures on each HLT, and
- illustrations from oblique aerial photographs.

Currently, there is no national guidance available on historic landscape assessment. However, the work of Cooney et al (2000) on historical landscapes (referred to in *Section 2.3.1*) was based upon a definition that is applicable to the current assessment. The definition is restated here:

*In broad terms, an **archaeological or historic landscape** can be defined as a discrete landscape based on the 'scale and integrity of the archaeological features [that] reflect significantly on the human history and land use of that area' (Cooney et al. 2000, 22).*

One of the aims of this study is to integrate historic landscapes within the wider landscape character assessment. Therefore, the LCTs and HLTs are described in more detail over the forthcoming pages. These lay the foundations for the landscape character areas, which are informed by a combination of LCTs and HLTs and are the focus of Chapter Four. *Annex B* contains details of oblique aerial photographs (A-I), which illustrate the historic landscape types.

3.4

PRESENTATION OF LCTS AND HLTs

These are presented in tabular format in the following pages. *Figures 6 and 7* illustrate LCTs and HLTs respectively. Each LCT is described briefly, accompanied by drivers and forces for change for each unit. The same structure is applied to the HLTs with the omission of drivers.

Table 3.1 *List of Landscape Character Types identified in County Clare (LCTs)*

LCT	Abbreviation
UPLAND TYPES	
Limestone Uplands	LU
Limestone Plateau	LP
Upland Hills	UH
Moorland Hills	MH
Upland Fringe	UF
Forested Upland Valley	FUV
LOWLAND TYPES	
High Drumlin Farmland	HDF
Low Drumlin Farmland	LDF
Limestone Farmland	LF
Limestone Farmland with Loughs	LFWL
Drumlin Farmland with Loughs	DFWL
Lowland Limestone Pavement	LLP
Limestone Valley	LV
Glacial Valley	GV
Farmed Rolling Hills	FRH
Farmed Lowland Ridges	FLR
Lough Fringe Farmland	LFF
River Valley Farmland	RVF
Built-up Areas	URBAN
COASTAL TYPES	
Coastal Limestone Slopes	CLS
Coastal Plateau	CP
Peninsular Farmland	PF
Coastal Farmland and Islands	CF
Coastal Plain and Dunes	CPD
Flat Estuarine Farmland and Islands	FEF

**Figure 6 County Clare:
Landscape Character Types**

- Built-up Areas
- Coastal Farmland and Islands
- Coastal Limestone Slopes
- Coastal Plain and Dunes
- Coastal Plateau
- Drumlin Farmland with Loughs
- Dunes
- Farmed Lowland Ridges
- Farmed Rolling Hills
- Flat Estuarine Farmland and Islands
- Forrested Upland Valley
- Glacial Valley
- High Drumlin Farmland
- Limestone Farmland
- Limestone Farmland with Loughs
- Limestone Plateau
- Limestone Uplands
- Limestone Valley
- Lough Fringe Farmland
- Low Drumlin Farmland
- Lowland Limestone Pavement
- Moorland Hills
- Peninsular Farmland
- River Valley Farmland
- Upland Fringe
- Upland Hills

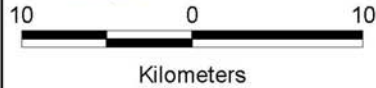
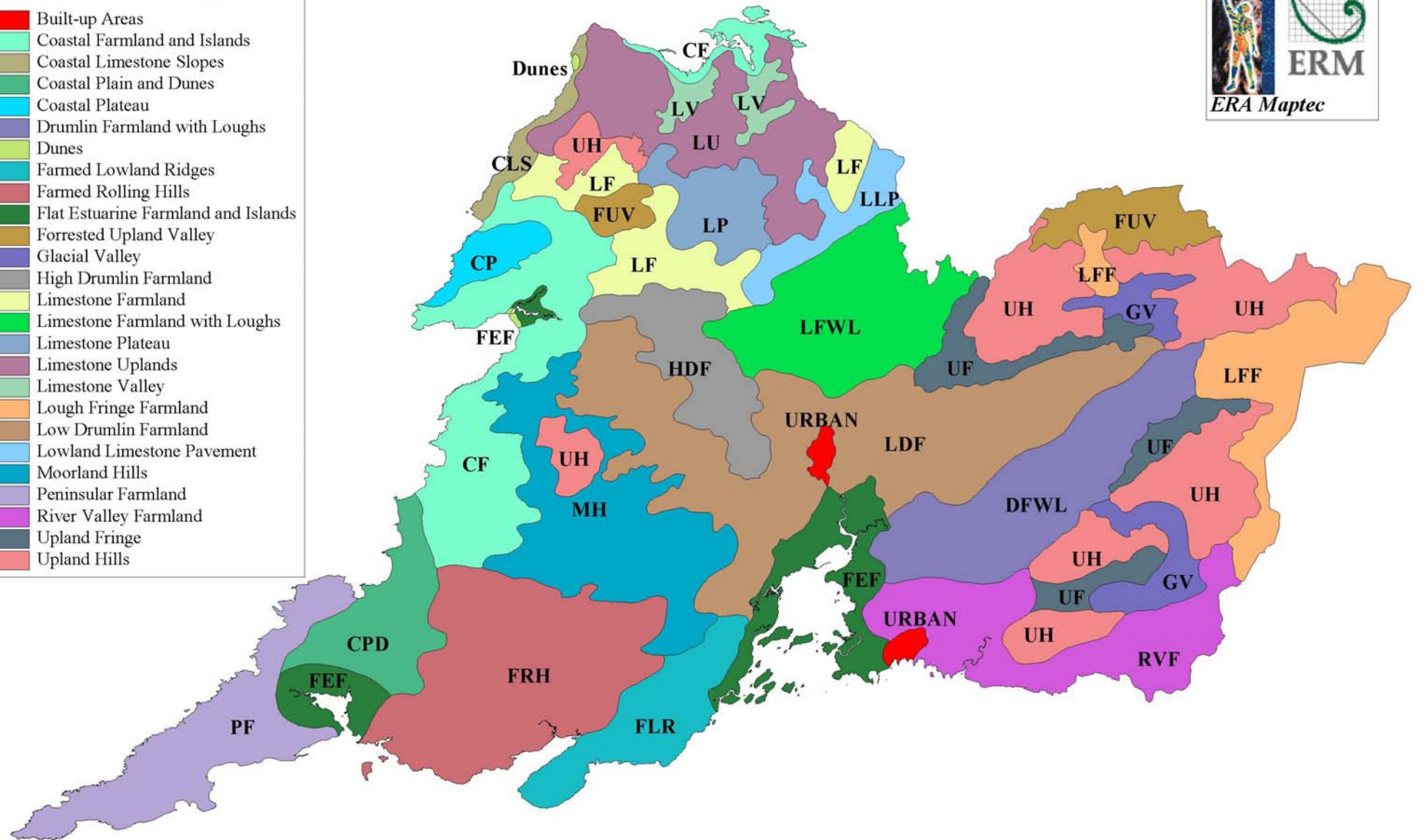
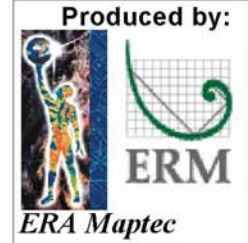


Table 3.2 Landscape Character Types

Landscape Character Types	Drivers	Description	Forces for Change
<i>Limestone Uplands</i>	<ul style="list-style-type: none"> • Topography is rounded to plateau like, but high • Elevation is over 200m • Geology is limestone with no surface covering of glacial material • Land cover is bare rock/limestone pavement • Traditional agricultural practices prevail 	<p>Distinctive karst scenery with large areas of bare or sparsely vegetated rock, limestone pavement, sinkholes, terraces and cliffs. The core areas are generally found above 200m and reach 350m. The absence of surface drainage is a distinctive feature with subterranean network of caves draining the limestone uplands. Land cover is predominately sparse vegetation and exposed rock, however within more sheltered slopes and where less grazing occurs, hazel scrub is present. On the thin limestone soils, high diversity of flora of significant botanical interest.</p> <p>Settlement is sparse with few modern roads, though tracks and older roads are apparent. Field boundaries are enclosed by rocky, limestone walls. As exemplified in the Burren uplands in the north west of the county, this landscape type is generally open, exposed and provides open views to surrounding lowlands.</p>	<ul style="list-style-type: none"> • Telecommunication masts • Tourism through visitor pressures and increased traffic along narrow roads • Road upgrades and widening • Hazel scrub regeneration across wide areas; within confined areas this creates an attractive mosaic landscape but decline of grazing regimes will impact on the limestone exposure • Extraction such as the quarrying and removal of limestone for rockeries, building etc; • Walking routes • Residential and agricultural development • Alternative energy

Landscape Character Types	Drivers	Description	Forces for Change
<i>Limestone Plateau</i>	<ul style="list-style-type: none"> • Topography is plateau like, not so high as the limestone upland • Elevation is generally over 100m • Geology is limestone with pockets with a surface covering of glacial material • Land cover is bare rock/limestone pavement/hazel scrub 	<p>This lower limestone pavement is found on the fringes of the limestone upland and is composed of dry valleys, sinkholes, occasional springs and pavement. Generally, this area is found above 100m and surface drainage is largely absent. Land cover is predominantly bare rock, sparse grasslands and hazel scrub, with occasional areas of limestone rich pasture. Limestone walls enclose fields and settlement is generally confined to pockets of pasture. Narrow roads are sometimes framed by tunnels of hazel. The pavement areas are open and windswept, allowing long views over surrounding areas.</p>	<ul style="list-style-type: none"> • Telecommunication masts • Tourism through visitor pressures and increased traffic along narrow roads • Road upgrades and widening • Hazel scrub regeneration across wide areas, within confined areas this creates an attractive mosaic landscape but decline of grazing regimes will impact on the limestone exposure • Extraction, quarrying and removal of limestone for rockeries, building etc • Walking routes • Residential and agricultural development • Alternative energy

Landscape Character Types	Drivers	Description	Forces for Change
<i>Upland Hills (including forested/open and mosaic)</i>	<ul style="list-style-type: none"> Coniferous forests and heather moor/rough grazing are dominant land cover, with blanket bog Topography is variable, but core areas over 200m and rising to 600m Excludes limestone areas as these are limestone uplands 	<p>These upland hills are found predominantly in the north and east of the county, in Sliabh Bernagh and Sliabh Aughty. They are composed of rolling upland hills with core areas above 200m and rising to 526m at the highest point. Occasional small loughs are present (e.g. Lough Atorick) and small streams drain the open slopes. Land cover is largely blanket bog, however this has been modified through coniferous planting in recent times. Consequently, a mosaic of land cover is more dominant currently, with open areas of heather, gorse, blanket bog and rough grasses accompanied by forestry. There is very little natural woodland, and where it exists it is confined to valleys and the lower slopes.</p> <p>These upland hills are often open, reflecting commonage regimes, however where enclosures exist they are increasingly post and wire with drainage ditches. Occasional older enclosures can be seen, composed of low stone walls in poor condition. Very little settlement and roads, confined to fringes, apart from forestry access roads. From these upland hills, extensive views are afforded across and towards surrounding landscapes.</p>	<ul style="list-style-type: none"> Afforestation pressures Felling of trees and forestry access roads Mobile phone masts Wind farm development Potential pressure, arising from increased access by walkers, particularly on flora and fauna and the natural environment
<i>Moorland hills</i>	<ul style="list-style-type: none"> Occurs between approximately 100 and 200m elevation Land cover is blanket bog and forest, both exploited and unexploited Usually unenclosed, sometimes under commonage Traditional agricultural practices prevail 	<p>These lower hills commonly fringe the upland hills and gently slope from the uplands proper. Elevation is generally between 100 and 200m, with core areas around 150m. Land cover is predominately blanket bog, heath and quite extensive areas of coniferous forestry, with evidence of cutover turf activity. Where discernable, field enclosures are usually low earth banks or post and wire fencing. Settlement is limited and communication routes are generally poor. Where forestry is absent, this type is very open with wide views available over lower landscapes. In the case of Ben Dash in west Clare, views are also afforded to and across the Shannon estuary.</p>	<ul style="list-style-type: none"> Forestry Windfarms Mobile phone masts Forest roads, planting and felling

Landscape Character Types	Drivers	Description	Forces for Change
<i>Upland Fringe</i>	<ul style="list-style-type: none"> • Fringes of upland: sloping towards the lowlands • Typically elevated topography, lying between approximately 100 to 200 m • Mosaic vegetation: forests, semi-natural woodland, marginal rushy land and grazing 	<p>These fringes are found typically on the edges of uplands with landform sloping gently towards lower and more intensive farmland, often drumlin belts. Landform is gentle and smooth with few rock outcrops, located usually between 100 and 200m. Drainage is provided by streams running perpendicular to the slopes. Land cover comprises a mosaic of land uses including marginal farming enclosed within hedgerows (lower areas) or walls (higher areas), coniferous forest blocks and some semi-natural woodland. Higher land, open moorland and hills are seen above these areas, with lower farmed landscapes below.</p> <p>Settlement is found on these fringes, composed of scattered farms and houses. Roads often transverse slopes with dead end tracks and driveways leading to farms. These areas are typically rural with a remote feel reflecting their location on the edge of the uplands. Examples can be seen around the fringes of Sliabh Bernagh and Broadford hills.</p>	<ul style="list-style-type: none"> • Changes in agriculture practices through intensification or declining activity • Afforestation and associated forestry activities • Any new inappropriate development
<i>Forested Upland Valley</i>	<ul style="list-style-type: none"> • Dominant forest coverage • Lie between upland and lowland landscapes, between about 100 and 200m • Rushy pasture between forests 	<p>Extensively forested upland valleys and fringes to higher moorland hills and moorland plateau areas, found at elevations of between 100 and 200m. These areas slope towards more settled and agricultural landscapes. Due to density of forestry, landform, settlement and historic features are often masked.</p> <p>Land cover is predominantly coniferous, with native woodland (hawthorn and willow) limited to stream valleys and rough grazing and scrub in between.</p> <p>Settlement is sparse, with a high number of derelict cottages and farm buildings viewed from the roads.</p> <p>Roads pass through forested areas allowing only occasional views. This creates a sense of remoteness and isolation within this landscape type and is exemplified around the valley north of Lough Graney within the Sliabh Aughty.</p>	<ul style="list-style-type: none"> • Forestry activities • Further abandonment of agriculture and traditional dwellings • Masking of underlying historical landscape and landform • Depopulation due to increased land take by forestry • Acidification and erosion of soils upon harvesting and potential impact of runoff • Lack of deer management • Degraded physical access, i.e. bridges

Landscape Character Types	Drivers	Description	Forces for Change
<i>High Drumlin Farmland</i>	<ul style="list-style-type: none"> • High drumlins and low rolling hills are predominant • Low productivity grazed grassland predominates, rushy and wet in lower hollows • Settlement is sparser than in low drumlin areas • Higher percentage land cover with wetland and forestry than in low drumlin farmland 	<p>A landscape of high rounded egg shaped hills, strongly orientated with direction of past ice movements, these frequently merge into low drumlins on boundary edges. Between drumlins, wetlands, loughs and occasional kettleholes are found, often with small streams winding around the drumlins. Land cover is a combination of peat, small coniferous plantations, pasture and rushy pasture. Native woodland is sparse on higher elevations but increases on lower slopes. Field boundaries are commonly earthbanks with scrubby vegetation enclosing small fields. Hedgerows increase on lower slopes. Settlement is scattered, with traditional farmsteads on slopes of drumlins, often with shelterbelts of trees. Some modern housing is also visible on the drumlin tops. Roads follow the drumlin pattern, and generally weave around drumlins. This landscape is both intimate and enclosed, with an increased open sense in higher areas and panoramic views from drumlin tops.</p>	<ul style="list-style-type: none"> • Agricultural change – intensification/abandonment • Afforestation of higher drumlins • Declining surface water quality • Any new inappropriate and non-traditional hilltop housing development • Degradation of hedgerows and banks to accommodate agricultural change
<i>Low Drumlin Farmland</i>	<ul style="list-style-type: none"> • Low drumlin fields are spread across the area • Improved grassland is the dominant land use • Settlement is more frequent than in high drumlin areas • Areas of low drumlin farmland have a higher percentage of native woodland cover, hedgerows and hedgerow trees than high drumlin farmland 	<p>Occasionally disorienting landscape of low rounded egg shaped hills with intervening flat land and bog, strongly orientated with direction of past ice movements. Wetlands, loughs and occasional kettleholes are found between the drumlins, often with small streams winding around the drumlins. These loughs and streams frequently have a high ecological value, in part due to their riparian and loughside vegetation. Bushy hedgerows and hedgerow trees commonly divide small fields and pockets of deciduous woodland are present. Settlement is scattered, with traditional farmsteads and outbuildings nestling on low drumlin slopes. However, modern housing development can also be seen, particularly on drumlin tops and in areas closer to Ennis. Winding narrow roads are common and weave around and sometimes over the drumlin landform. The landscape is intimate and rural, with hedgerows and trees adding a sense of enclosure and affording limited views. Much of the central area surrounding Ennis is composed of this landscape type with good examples found near north of Tulla.</p>	<ul style="list-style-type: none"> • Agricultural change – intensification/abandonment • Development pressures particularly linear development along roads close to towns and increased erosion of agricultural land • Loss of traditional landscape features such as hedgerows • Housing development on drumlin tops • Afforestation of higher drumlins • Impacts on water quality

Landscape Character Types	Drivers	Description	Forces for Change
<i>Limestone Farmland</i>	<ul style="list-style-type: none"> • Geology is limestone • Land cover is mainly pasture/grassland • Drumlins are absent • Woodland and trees present but not to the same degree as in limestone farmland with loughs (see below) 	<p>Limestone farmland is characterised by outcrops of limestone (pavement and grass topped boulders) scattered amongst rich pastures within a generally flat or softly undulating landscape. Surface drainage is infrequent, reflecting the limestone geology, although clear-watered streams and rivers are found meandering in the valley bottoms such as the Fergus valley outside Corrofin. Limestone walls divide fields where limestone is exposed, elsewhere areas of poor drainage and more rushy vegetation are seen where overlying glacial till caps the limestone. In these areas hedgerows are evident. Limited woodland, although hazel scrub is evident and deciduous trees are evident along rivers and streams. Settlement is scattered across these areas, with limestone buildings evident, particularly the older buildings and historic remains such as castles and churches. The flat landscape creates a sense of openness and generally affords long views across the landscape and to adjacent upland areas and valleys.</p>	<ul style="list-style-type: none"> • Agricultural change: improvement or intensification of agriculture • Pollution of waters with agricultural chemicals • Degradation of drystone walls and piecemeal replacement with concrete, post and wire etc • Loss of traditional landscape features such as stone walls and gateposts • Boundary treatments to properties which are out of character with traditional limestone or hedgerow boundaries • Extraction of limestone through quarrying
<i>Limestone Farmland with Loughs</i>	<ul style="list-style-type: none"> • Geology is limestone, • Cover of glacial till and moraine in the form of drumlins also apparent • Land cover is mainly pasture/grassland with woodland • Loughs are a dominant land cover type (5%) • Elevation is low: below 60m • High percentage of native woodland cover including hazel scrub 	<p>Areas where a large number of loughs are seen, predominantly orientated to align with the direction of historic ice movements, this type is similar to low drumlin farmland but with higher prevalence of loughs. Limestone outcrops are apparent in certain areas, with lowland limestone pavement, often well vegetated with hazel scrub e.g. Dromore nature reserve. Land cover is limestone pasture and loughs, often fringed with reeds and native woodland, creating habitats of high ecological value. Where limestone is close to the surface, limestone walls (often blocky) enclose fields, where glacial deposits are prevalent, there is an increase in hedgerow enclosures. Settlement is spread across these areas with small towns also being the foci of settlement. However, the undulating enclosed nature of the landscapes gives the impression of lightly scattered settlement. Attractive, intimate and enclosed areas with glimpses of the loughs providing attractive vistas</p>	<ul style="list-style-type: none"> • Impacts upon valued rich flora of limestone, limestone pavement, and lough areas • Agricultural improvement or abandonment • Development pressure, particularly close to existing settlements, where inappropriately sited and designed houses are visible • Loss of traditional landscape features such as stone walls, gateposts • Extraction of limestone – quarrying • Declining water quality of loughs

Landscape Character Types	Drivers	Description	Forces for Change
<i>Drumlin Farmland with Loughs</i>	<ul style="list-style-type: none"> • Geology is predominately off shelf muddy and cherty limestones, with covers of glacial till and moraine in the form of drumlins • Land cover is mainly pasture/grassland with woodland • Loughs account for around 5% of land cover • Elevation is low: below 80metres 	<p>Broad areas of drumlins and loughs predominantly orientated to align with the direction of historic ice movements. These landscape types are found in wide belts resulting from the scouring of ice within certain corridors. Numerous loughs retain a natural character, with fringes of reeds and deciduous woodland, and retain high ecological value. Land cover is dominated by pasture and woodland fringes around loughs. In the areas where limestone is at the surface, limestone walls replace the hedgerows and limestone outcrops are apparent in limited areas. Settlement is spread across these areas with villages such as Kilkishen also providing the foci of settlement.</p> <p>An attractive, intimate and enclosed landscape type with glimpses of the loughs providing attractive vistas.</p>	<ul style="list-style-type: none"> • Impacts upon valued rich flora of lough areas • Agricultural improvement or abandonment • Development pressure, particularly close to existing settlements, where inappropriately sited and designed houses are visible • Loss of traditional landscape features such as stone walls and gateposts
<i>Lowland Limestone Pavement</i>	<ul style="list-style-type: none"> • Land cover mainly bare rock • Geology is limestone • Elevation low: less than 50m, flat topography 	<p>Mosaic of classic low-lying limestone pavement and hazel scrub, with small scale limestone pastures across a low-lying, relatively flat landscape. Rich limestone pastures are found in generally small fields bounded by substantial limestone walls often blocky in construction. Small loughs are also present with shallow reedy banks. Settlement is sparse, with occasional limestone cottages and farm buildings.</p> <p>Unbroken views across pavement landscape gives an exposed, remote feel to this rural landscape.</p>	<ul style="list-style-type: none"> • Extraction of limestone • Total recolonisation with hazel scrub masking landform and historic features • New inappropriately sited and designed farm buildings

Landscape Character Types	Drivers	Description	Forces for Change
<i>Limestone Valley</i>	<ul style="list-style-type: none"> • Geology is limestone • Topography is valley, surrounded by limestone uplands • Land cover mainly pasture with deciduous woodland 	<p>Dry limestone valleys with subterranean drainage, nestled within limestone uplands. These have a broad U shape with steep limestone slopes often with terraces. Land cover is predominately pasture with deciduous trees present, particularly ash. These rich pastures are bounded by substantial blocky limestone walls, creating small angular fields. The green pastures are particularly lush when seen in context of surrounding limestone uplands. Limited and scattered settlement, typically single storey white farm cottages. Good views up towards the valley but generally enclosed by landform of the valley itself.</p>	<ul style="list-style-type: none"> • Agricultural change • Pollution of underground waters from agricultural runoff • Inappropriate built development
<i>Glacial Valley</i>	<ul style="list-style-type: none"> • Land cover consists of a mosaic of pasture/grassland • Topography constrained by steep slopes • Meandering river • Communication routes • Historical activity 	<p>Broad U shaped valley, scoured by glaciers with some glacial features, such as drumlins, in the valley floor which is usually dominated by meandering river with loughs. Land cover is a mosaic, in which the broad valley floor supports pasture and woodlands, and steeper slopes are covered by heather moor or large blocks of forestry. Boundaries are also varied, with thick hedges and hedgerow trees, giving a densely wooded appearance to the valley floor, whilst earthbanks, or hedges with fewer trees, are more likely to be found on upper slopes. Valleys are often key communication routes with both major and minor roads, following direction of valley. These routes are often long standing, resulting in concentrations of historical features, and traditional stone bridges are likely to be a feature within this landscape type. The Broadford gap is a good example of a longstanding communications route. The lower areas are more settled, with small farm dwellings and traditional farm outbuildings. Views are afforded along the valley and up to the surrounding uplands.</p>	<ul style="list-style-type: none"> • Afforestation • Agricultural intensification or abandonment • Inappropriate housing/holiday homes

Landscape Character Types	Drivers	Description	Forces for Change
<i>Farmed Rolling Hills</i>	<ul style="list-style-type: none"> • Land cover consists of a mosaic of forestry and pasture/grassland • No drumlins • Rolling uneven topography 	<p>Very varied, complex landscape incorporating many elements with a rolling landform that is very uneven. Land cover reflects this complexity with a mosaic of lowland blanket bog, improved and semi-improved pasture and blocks of commercial forest (coniferous). Varied enclosures including post and wire and hedgerows. Farms, houses and villages are quite frequent though dispersed throughout the area and there are distinct 'corridors' along major transport routes, where settlement is concentrated. Condition is also variable, with some areas more intact than others. The presence of bog and forestry also creates the impression of being in a more upland area in places. Views are afforded from more elevated hills across the surrounding areas and to the Shannon estuary.</p>	<ul style="list-style-type: none"> • Afforestation • Agricultural intensification or abandonment • Infrastructure can be highly visible across this landscape type • Roads will inevitably become an integral part of this landscape type, i.e. Shannon Airport Road and Gort Road
<i>Farmed Lowland Ridges</i>	<ul style="list-style-type: none"> • Linear ridge topography • Land cover is pasture, deciduous woodland and scrub 	<p>Low linear ridges with shallow river valleys between ridges and rock outcrops on steeper slopes. This is also a complex landscape incorporating many elements. Land cover is largely pasture and some hay, with pockets of deciduous woodland and scrub, and occasional small coniferous plantations. A variety of enclosures are evident and include dense hedgerows, earthbanks and some stone walls. This is quite a settled area, with traditional farm buildings and cottages. Small villages with increasing modern buildings are also present. Communication routes and views are generally aligned along valleys.</p>	<ul style="list-style-type: none"> • Agricultural change • Afforestation • Degradation of stone walls and earthbanks • Potential pressure from increased modern development in small villages

Landscape Character Types	Drivers	Description	Forces for Change
<i>Lough Fringe Farmland</i>	<ul style="list-style-type: none"> • Land cover is pasture/grassland • Within maximum distance of 3 km of a large lough • Land slopes towards lough 	<p>Land slopes toward the loughs and is contained by surrounding uplands, these types are dominated by large expansive loughs (such as Lough Derg). Several streams and rivers drain into the lough and lough shores are characterised by reeds and semi-natural deciduous vegetation. Quality of lough can be very high with good fisheries, depending on management of surrounding land and lough inputs. Land cover is pasture and lough fringe woodland, with fields enclosed by bushy hedgerows with hedgerow trees. Piers and quaysides, picnic areas and car parks scattered along lough sides and roads generally fringe the lough or traverse up away from the lough. Scattered settlement around lough, though generally quite limited settlement on lough fringe or lough shore. A number of small villages may be present on upper slopes of boundary, depending on historical influences.</p> <p>Lough itself dominates views and draws the eye, long views across lough and to surrounding elevated areas are afforded from loughshore.</p>	<ul style="list-style-type: none"> • Tourism development, i.e. car parks and picnic areas • Water-based sports • Changes to farming practices • Development on shoreline such as marinas and interpretive facilities • Declining water quality
<i>River Valley Farmland</i>	<ul style="list-style-type: none"> • Land cover is pasture, settlement, built up • Aligned along a wide river (1km wide on average) 	<p>Meandering river and river valley landscape. Streams drain from adjacent higher slopes and drumlin areas and generally area is low-lying. Land cover is largely pasture with natural wetland vegetation and mature riparian trees. Fields are enclosed by a variety of forms, including drainage ditches and post and wire fences in wetter areas, with earth banks and hedgerows elsewhere. Settlement and communications are found on higher land away from seasonally flooding areas. However, the importance of the river for communications is also reflected in a relatively high number of towns (such as Killaloe, O'Briensbridge and Limerick) and villages and stone bridges crossing the streams draining into the river. Views are afforded to the river through gaps in the vegetation and along the river banks.</p>	<ul style="list-style-type: none"> • Declining water quality • Development in floodplain and water supply catchment areas • Inappropriate tourism development

Landscape Character Types	Drivers	Description	Forces for Change
<i>Built-up Areas</i>	<ul style="list-style-type: none"> Land cover is mainly buildings 	<p>Urban settlement with denser population levels that provides a hub of commercial, industrial and cultural activity that impacts on surrounding rural areas. Major communication routes radiate from centres including road and rail services. A variety of urban style buildings and often a number of historical features as found within Ennis; alternatively, planned urban centre of Shannon reflects more homogenous urban styles. Linear expansion along the roads a frequent element, resulting in 'urban sprawl'.</p>	<ul style="list-style-type: none"> Insensitive urban sprawl Petrol stations on fringes – poor visual approach to towns Traffic and congestion Quarries for stone nearby Loss of traditional urban styles by inappropriate new building designs
<i>Coastal Limestone Slopes</i>	<ul style="list-style-type: none"> Limestone geology including limestone pavement along coast edge Sloping to sea Rectangular fields. Sometimes ladder fields Grazed pasture 	<p>Landform sloping to the sea, with a limestone pavement and low stepped cliff edge. Generally the absence of surface water is a distinctive feature with occasional coastal springs being the exception. Land cover is dominated by pasture with little vegetation on the exposed slopes. Fields are large and rectangular, enclosed in some parts with dry stone limestone walls. Ladder fields are also evident. Settlement is scattered with distinctive white cottages a feature. Enclosed by bare rock limestone uplands this is an exposed and open landscape with long views afforded to sea and along coast as exemplified along north west coast of the county.</p>	<ul style="list-style-type: none"> Agricultural change Loss of field patterns and degradation of drystone walls Sea level rise Inappropriate tourism development
<i>Coastal Plateau</i>	<ul style="list-style-type: none"> High elevation (>100m) High cliffs on seaward side Pasture/farmland and occasional settlement 	<p>This landscape type is found above 100m, and is composed of flat or gently undulating topography sloping to coastline. There are frequently high cliffs on seaward side, whilst slopes on landward side merge with lower coastal farmland. This can be seen around the Cliffs of Moher in northwest Clare.</p> <p>Land cover is composed of marshy areas, with rough pasture and little vegetation, apart from windswept trees that reflect coastal influence. Farmland can be quite degraded and is usually enclosed by post and wire, earthbanks or low stone walls forming large fields. Very limited settlement with occasional farms and houses located in more sheltered areas. It is typically exposed and windswept and due to limited vegetation affords expansive views to adjacent landscapes and uplands and to the coastline and sea.</p>	<ul style="list-style-type: none"> Tourism Development in prominent locations Agricultural change Potentially, wind farms and communication masts

Landscape Character Types	Drivers	Description	Forces for Change
<i>Peninsular Farmland</i>	<ul style="list-style-type: none"> • Sea is on more than one side • Land cover is grassland/pasture • Ladder fields are widely intact across the area 	<p>Peninsular landscape, largely defined by impacts of ocean or estuary. Predominantly flat but with distinctive low linear hills and on exposed coast, dramatic cliffs, sea stacks, arches and synclines. Land cover is largely improved grassland with little vegetation other than some windswept trees on banks of fields. Ladder fields give rise to a highly distinctive field pattern and create a striped appearance; these are enclosed by earth banks. Scattered settlement, frequently of single storey farm cottages and outbuildings, often painted white. Otherwise, settlement is within small villages such as Carrigaholt and Kilbaha. Largely exposed, expansive and rural landscape, strongly influenced by the sea. Extensive views from coast and elevated areas across peninsula, to the sea and neighbouring counties.</p>	<ul style="list-style-type: none"> • Agricultural change intensification or abandonment • Loss of traditional and distinctive field pattern • Degradation of earth banks • Unsympathetic housing and farm development • Masts and windfarms • Sea level rise
<i>Coastal Farmland and Islands</i>	<ul style="list-style-type: none"> • Lowland • Proximity to coast • Rolling Pasture 	<p>Low rolling farmland gently sloping towards coast. Coastline composed of bays and some beaches of yellow sand. Streams and rivers drain towards the coast and create distinctive river valleys within rolling landform. Land cover is predominately grassland with grazing and silage and hay production. Trees are found in more sheltered locations and within hedgerows. Scattered settlement, with numerous recent bungalows and houses (often holiday homes) evident. Open and exposed islands can be identified from the coast. Seaward views dominate and are expansive.</p>	<ul style="list-style-type: none"> • Unsympathetic tourism and housing development • Agricultural change – intensification or abandonment • Sea level rise • Liscannor housing development on cliff tops in particular at Quilty and Liscannor

Landscape Character Types	Drivers	Description	Forces for Change
<i>Coastal Plain and Dunes</i>	<ul style="list-style-type: none"> • Topography is flat • Land cover is low grade pasture • Ground conditions are wet 	<p>Distinctively flat farmland found near to coasts, with sand dune systems with a characteristic hummocky landscape. Land cover is largely pasture and can be rushy in parts. Limited tree cover but present in sheltered pockets. Valuable habitats and fragile ecosystems, with specialised vegetation, e.g. marram grass. Angular field patterns are enclosed by ditches (attempting to address poor drainage), banks, hedgerows and post and wire fences. Roads are often located along elevated causeways through the wetter areas, and settlement is limited, confined to areas of higher ground and the low hills, which are found occasionally through these areas. Coastal towns and villages also provide foci of settlement (such as Kilkee). Open and exposed, extensive views are afforded seaward and landward within this landscape type.</p>	<ul style="list-style-type: none"> • Sea level rise • Tourist development towards the coast • Further development of golf courses on dunes • Grazing on the dune systems • Degradation of dune systems which form part of natural coastal defence
<i>Flat Estuarine Farmland and Islands</i>	<ul style="list-style-type: none"> • Land cover is pasture/mud/foreshore/salt marsh • Flat • Roads on embankments • Flood defences • Proximity to estuary • Elevation is close to 0m AOD • Daily inundation of mudflats by the tide 	<p>Distinctively flat farmland adjacent to estuaries, which are inundated daily by the tide. Contained by sea defences which limit views, beyond which are extensive mudflats exposed at low tide and fringed by salt marshes. Rich bird life reflects the importance of mudflats for feeding birds. Land cover is pasture combined with estuarine elements such as mudflats and salt marsh with little tree cover. Fields are enclosed largely by ditches (reflecting the poorly drained characteristic), with occasional banks or hedgerows and post and wire fences. Limited roads are often located on elevated causeways through the wetter areas. Settlement is quite limited, confined to areas of higher ground and the low hills which are found occasionally through these areas</p>	<ul style="list-style-type: none"> • Tidal inundation as a result of sea level rise • Agricultural change • Offshore wind farms • Estuary side development: power stations, masts etc • Strong vertical elements in flat landscapes • Any new insensitive housing development • Coastal erosion • Tourism potential development on islands

Table 3.3 Habitat Types

Habitat Type	Description
WL1	Hedgerows
WL2	Treelines
WS1	Scrub
WS2	Immature woodland
WD1	Broadleaved woodland (mixed)
WD4	Conifer Plantation
WD5	Scattered trees and parkland
WN6	Wet willow – alder-ash woodland
WN1	Oak-birch-holly woodland
WN5	Riparian woodland
LS1	Shingle and gravel shores
LS2	Sand dunes
LS4	Mud shores
GA1	Improved grassland
GA2	Amenity grassland
GS1	Dry calcareous and neutral grassland
GS4	Wet grassland
ER2	Exposed calcareous rock
HH3	Wet heath
HH4	Montane heath
BL1	Stone walls and other stonework
GM1	Marsh
CC1	Sea walls, piers and jetties
CS1	Rocky sea cliffs
CD2	Marram dunes
PB1	Raised bog
PB2	Upland blanket bog
FL3	Limestone/ marl lakes
FL6	Turloughs
FW2	Depositing lowland rivers

**Figure 7 County Clare:
Historical Landscape**

-  Airport
-  Broad Leaved Woodland
-  Coastline/Intertidal
-  Designed Landscape
-  Dunes
-  Enclosed Land (1)
-  Enclosed Land (2)
-  Enclosed Land (3)
-  Enclosed Land (4)
-  Estuarine/Intertidal
-  Extractive Industry
-  Recreational
-  Rough Ground (1)
-  Rough Ground (2)
-  Rough Ground (3)
-  Settlement (1)
-  Settlement (2)
-  Water Bodies (1)
-  Water Bodies (2)

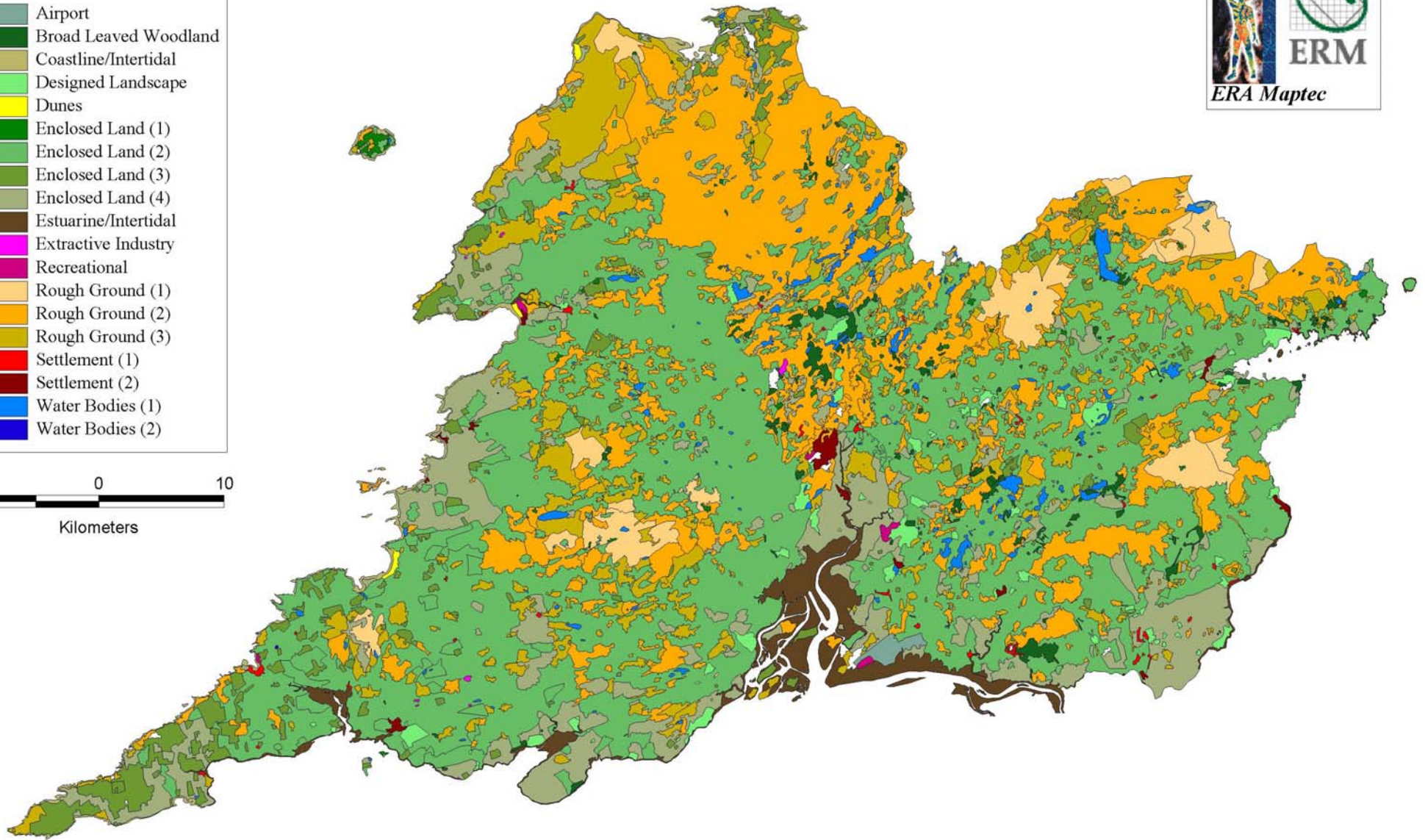
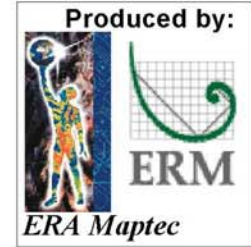
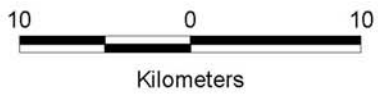


Table 3.4 Historic Landscape Types identified in County Clare

Historic Landscape Character Types	Drivers	Description	Forces for Change
<i>Enclosed Land 1</i>	<ul style="list-style-type: none"> • Sinuous boundaries • Irregular size and shape • Small scale 	<p>Many small fields and animal enclosures typify EL1. It is not a common landscape type, but can be observed in isolated patches in the Burren, east of Ennistymon, and elsewhere (it is a dominant type on the neighbouring Aran Islands). Field boundaries have very few straight lines and field walls are typically one stone thick, with air gaps. Such small fields are associated with subsistence-scale farming and are not suited to mechanised regimes (tillage, hay or silage making). Rather, it is appropriate for hand cultivation or permanent pasture and labour intensive regimes. For instance, individual cows may be milked by hand in the field to supply family needs. It, consequently, represents a survival of older farming patterns into the modern era.</p>	<ul style="list-style-type: none"> • Farm mechanisation • Consolidation of land-holdings and fields • Masts
<i>Enclosed Land 2</i>	<ul style="list-style-type: none"> • Curvilinear-sinuous and straight boundaries • Large scale • Extensive 	<p>EL2 is composed of medium-sized fields suitable for mechanised farming. It may be considered the common form of enclosed land and can be seen in the main farming belts (e.g. a broad swathe sweeps from the Fergus through to the southern edge of the Burren, another lies about the R483 from Kilrush). Mostly, the fields are post-mediaeval, although they occasionally incorporate earlier boundaries. The boundaries incorporate some substantial field walls and hedge banks. It is associated with market-oriented family farms, some now part-time and is adapted to, but not designed for, mechanised regimes (silage etc).</p>	<ul style="list-style-type: none"> • Introduction of larger machinery • Hedgerow removal • Conversion to alternative uses – golf courses, hotel grounds

Historic Landscape Character Types	Drivers	Description	Forces for Change
<i>Enclosed Land 3</i>	<ul style="list-style-type: none"> • Long rectilinear fields, often subdivided • Large scale • Often perpendicular to roads, some of which are 19th-century construction • Main boundaries straight but not necessarily parallel 	<p>EL3 includes 'ladder farms' on marginal ground (congested districts re-organisation?) on Loop Head and the west coast. Those on Loop Head are perpendicular to roads built after the 18th-century grand jury maps were compiled and were laid out subsequent to the 'new' roads construction. Consequently EL3 comprises enclosed allotments of common fields in some locations. It potentially includes medieval Burgage plots near historic towns. Such rectilinear fields are associated with market-oriented family farms, some now part-time and are adapted to, but not designed for, mechanised regimes (silage etc). It is an 'imposed' landscape and implies large-scale planning.</p>	<ul style="list-style-type: none"> • Decline of marginal farmed areas • Hedgerow removal • Conversion to alternative uses – golf courses, hotel grounds
<i>Enclosed Land 4</i>	<ul style="list-style-type: none"> • Irregular size and shape • Straight boundaries 	<p>EL4 is, characteristically, well-drained fields with hedgerows and can be found near to large houses and estates in the Shannon and Fergus estuaries. Extensive areas are also found in the improved land either side of the Headrace Canal and on the west coast from Quilty to north of Spanish Point, east of Lahinch and north of Liscannor. These locations have good communications by rail and water and EL4 is an indicator of market-oriented farming and, probably, estates set out by individual owners.</p>	<ul style="list-style-type: none"> • Ribbon development along roads • Hedgerow removal • Conversion to alternative uses – golf courses, hotel grounds

Historic Landscape Character Types	Drivers	Description	Forces for Change
<i>Rough Ground 1</i>	<ul style="list-style-type: none"> Open land (enclosures >1km²) 	<p>RG1 comprises open land found in the highest/steepest areas (Gleninagh Mountain in north-west Burren, Ben Dash, Sliabh Callan, Sliabh Bernagh and Maghera, less extensively in lowland bog north of Moanmore Lough). Apart from Gleninagh Mountain these are areas of peat cutting (active and relict) within extensive blanket bog. These areas were always too high or steep to be attractive even for seasonal pasturage although small numbers of animals may have been put on them. Historically they may be more important as barriers and, because they visually dominate areas, they have had a continuing presence as fixed references. Cairns and tombs are often located on the skyline in these places (ritual and devotional landscape below).</p>	<ul style="list-style-type: none"> Peat extraction Wind farms Conifer plantation
<i>Rough Ground 2</i>	<ul style="list-style-type: none"> Divided land with sinuous irregular boundaries 	<p>Areas of rough ground with sinuous field boundaries are mostly found on lower or less steep slopes than RG1, often bordering it (eastern Burren, Sliabh Carran - Sliabh Cairn, Glenvagalliach). Much of this was previously common land and would have been used for the same purposes as RG1, and looked much the same from the Late Bronze Age onwards. These slopes are historic seasonal pastures (winterage on limestone, summer on shale-country). On bitter land these are areas of peat cutting (active and relict) and growth. As it is mostly unimproved pasturage, RG2 has large numbers of visible megalithic tombs and ringforts, particularly on limestone karst.</p>	<ul style="list-style-type: none"> Conifer plantation (Some areas - e.g. Turkenagh - now almost totally covered) Peat extraction Potential for wind farms

Historic Landscape Character Types	Drivers	Description	Forces for Change
<i>Rough Ground 3</i>	<ul style="list-style-type: none"> Divided land with straight boundaries 	<p>Rough ground divided by straight field boundaries can be found in lower or less steep areas than RG1 (often adjoining both RG1 and 2; e.g. Sliabh Elva, lower slopes of Sliabh Callan and Ben Dash). RG3 is predominant on bitter land, peats, rendzinas and gleys. Much of it was previously common land and historic seasonal pastures. Peat has developed after the 'Climatic optimum' 4,000BP (Before Present) and consequently may have covered relict Neolithic landscapes. There are visible large numbers of ringforts and megalithic tombs though less than RG2</p>	<ul style="list-style-type: none"> Conifer plantation Peat extraction Potential for wind farms
<i>Broadleaved Woodland</i>	<ul style="list-style-type: none"> Anciently managed woodland 	<p>Widespread small areas of broadleaved woods can be found in the central lowlands particularly north of Ennis and near the Shannon and Lough Derg but not west of the Fergus. The persistence of 'Derry' in place names indicates they are survivals of a once more common landscape type. The areas marked are those that appear on late 19th-century mapping and are smaller patches of woodland than the usual today (mostly <1km²). They sometimes form a fragment of more widespread 20th-century planting. Historic woods are often near loughs or on steep slopes within a farmed landscape. Coppiced roundwood has been found in Bronze Age trackways and some of these woods may be thousands of years old (the land they occupy not being fit for much else). Some woods form shelter belts around demesne land where they have escaped more widespread felling for fuel.</p>	<ul style="list-style-type: none"> Traditional management and woodland exploitation declining Golf courses and new hotels

Historic Landscape Character Types	Drivers	Description	Forces for Change
<i>Designed Landscape</i>	<ul style="list-style-type: none"> Demesne land converted to parkland 	<p>These are landscapes that have been manipulated to enhance natural features and so have high visual amenity and often incorporates wider views. They are clustered around Ennis, Bridgetown, Scarriff, Killaloe and Kilrush and along the Shannon – few west of the Fergus. Their distribution corresponds with centres of population, wealth and immigration and certain political restrictions from the 17th-century onwards (e.g. buffer zone 1-mile in from coast or estuary). This type may incorporate some broadleaved woodland and loughs or pools generally landscaped within the broader parkland. Often includes 'ruins' as a functional component of the landscape, notably at Mooghaun (Late Bronze Age hillfort) – but churches and tower houses more commonly.</p>	<ul style="list-style-type: none"> Conversion to hotels, corporate training or research facilities, golf courses, hotels (however sensitive conversion guarantees the survival of the type) Neglect through lack of finance or skills
<i>Extractive Industries</i>	<ul style="list-style-type: none"> Quarries shown on the 6" - OS series of maps 	<p>Historically, quarrying was far more prevalent than it is now and many sites are not mapped but form features on a local scale. Some quarries are not represented as they are incorporated in other types (e.g. Cliffs of Moher, quarried for flagstone). Individual quarries will have been distributed across the county as there are many economic stone types outcropping; such small-scale quarrying activities are, by their nature, short-lived. Abandoned quarries can form important ecological niches adding diversity to an area.</p>	<ul style="list-style-type: none"> Large-scale modern quarrying Road enlargement or straightening

Historic Landscape Character Types	Drivers	Description	Forces for Change
<i>Settlement 1</i>	<ul style="list-style-type: none"> Rural nucleated settlement as shown on the Discovery Series maps 	<p>Villages. In addition to local shops etc., rural villages are the venues for fairs and markets (e.g. Kilfenora, Corrofin, Feakle). Also included are fishing villages and small ports on the coast (e.g. Doolin, Ballyvaughan) and resort villages (e.g. Mountshannon). Some roadside villages are too strung-out to be marked as a landscape type (e.g. Coosheen – An Cuasín – previously a kelp village).</p>	<ul style="list-style-type: none"> Tourist development Population decline due to 2nd holiday home demand Withdrawal of rural services and transport
<i>Settlement 2</i>	<ul style="list-style-type: none"> Larger settlement areas visible on satellite imagery and Discovery Series maps Urban area including 20th-century suburbs and industrial estates 	<p>Older towns often have monastic routes and associations with magnates and major lords. Most have 19th-century cores, which continue with commerce, shops and entertainment as they were built. Ennis, the county town, is the largest and combines most functions (marts, juridical, administrative). Elsewhere, Ennistymon, Killaloe, Tulla, Miltown Malbay etc., are market towns and Lahinch, Scarriff, Spanish Point continue as resorts and Kilrush a small port</p>	<ul style="list-style-type: none"> Town centre redevelopment Designated 'Section 23' and similar incentivised redevelopment Decline of livestock markets and rural industries (e.g. grain mills) Withdrawal of rural services and transport
<i>Airports</i>	<ul style="list-style-type: none"> Airport 	<p>History does not stop at a certain date and Shannon Airport has both a history of its own, and has played a part in wider events.</p>	<ul style="list-style-type: none"> Airport development, new terminals New runways Peripheral works – emergency fuel jettison areas, access corridors Associated industry and warehousing Tourist accommodation

Historic Landscape Character Types	Drivers	Description	Forces for Change
<i>Recreational</i>	<ul style="list-style-type: none"> • Golf Courses • Campsites 	<p>The number and distribution of golf courses and campsites is underestimated in this analysis. They are a growing landscape type, as increased access to cars allows urban dwellers to seek recreation in the countryside. Having fun is a defining characteristic of human beings, so this landscape type is no less worthy of record than those defined by work or subsistence.</p>	<ul style="list-style-type: none"> • Landscaping new features, bunkers etc • Access works • New buildings, bars, shops, toilets, showers
<i>Water Bodies 1</i>	<ul style="list-style-type: none"> • Natural bodies of standing water 	<p>Loughs and natural pools (some are included in designed landscapes). Historically, they have both provided a resource for fishing and waterfowling, the access to which was controlled by successive power structures. Island settlements and crannogs are a long-lived and characteristic form of the Irish (and Scots) landscape. Pools and loughs have also witnessed episodes of ritual deposition in the Bronze and Iron Ages (and later possibly baptism, or water cures) and so could be included in ritual and devotional landscapes below. Standing water can preserve organic remains which otherwise decay and is a vital archaeological resource. These include fish traps and weirs, which may be preserved in shore muds but have been rarely studied and are not represented on the Record of Monuments and Places. The pollen sequences preserved in lake sediments reflect the lowland vegetative covering and allow useful comparisons with those recovered from upland peats.</p>	<ul style="list-style-type: none"> • New piers, fishing stands etc • Diversion of water for irrigation etc

Historic Landscape Character Types	Drivers	Description	Forces for Change
<i>Water Bodies 2</i>	<ul style="list-style-type: none"> Artificial bodies of standing water 	Reservoirs and artificial pools have been constructed for a variety of purposes, including millponds. Artificial lakes or enhanced pools are often included in designed landscapes (above). Generally, they are less important than WB1 for preserved archaeological remains.	<ul style="list-style-type: none"> New piers, fishing stands etc Diversion of water for irrigation etc
<i>Estuarine/river intertidal</i>	<ul style="list-style-type: none"> Lies between mean high and low water marks River and estuary beaches and muds. Not coastal 	Mudflats, tidal creeks and reed beds are rich ecological zones, which have been used for fishing, wildfowling, gathering reeds for thatch and digging for shellfish or bait worms. They are rich in preserved organic archaeological remains, which have recently been mapped and studied by the Discovery Programme. These include fish weirs, dug-out boats, as well as the possible remains of animal carcasses after butchery.	<ul style="list-style-type: none"> Scouring erosion of the alluvial sediments occurs as a result of a steepened 'flood profile' (the time ratio between storm and run-off) caused by increased built up areas nearby, or larger road surfaces, or modern agricultural drainage New piers for recreational traffic or in-shore fishing vessels New ferry facilities
<i>Coastline and coastal intertidal</i>	<ul style="list-style-type: none"> Lies between the margins of rough and enclosed land and low water mark North and west Atlantic coast of Clare 	Defensive features, such as promontory forts or, occasionally, Martello towers, dominate the landscape as they occupy strategic positions. Unlike the rivers and estuaries, the coast is destructive of a lot of archaeological remains. Previous land-uses have included digging for shell fish or bait worms, collecting seaweed, sand, eggs and fishing, launching small boats	<ul style="list-style-type: none"> Coastal erosion Intense tourist development around high amenity areas i.e Kilkee and Lahinch New golf courses or links

Historic Landscape Character Types	Drivers	Description	Forces for Change
<i>Dunes</i>	<ul style="list-style-type: none"> Sand dunes by the Atlantic coast 	<p>Sand dunes occur in only a few places, such as White Strand. They may have covered a road marked on the 1789 Pelham Grand Jury map and experience elsewhere (like the churches covered in the Aran Isles) indicates it is likely to have covered older remains or relict landscapes. Collecting eggs and quarrying sand have been their principal historic uses.</p>	<ul style="list-style-type: none"> Coastal erosion Intense tourist development around high amenity areas' New golf courses or links

Historic Landscape Character Types	Drivers	Description	Forces for Change
<i>Devotional and Ritual</i>	<ul style="list-style-type: none"> • Clusters of three or more religious or ritualistic monuments within 100m of each other • Places of particular noted importance (Magh Adair - coronation site) • The views to and from cairns and tombs that dominate the visual landscape, locally taken as those of elevations greater than 200m 	<p>A key aspect of the way individuals and societies relate to landscape is through devotional and ritual practices (e.g. Croagh Patrick).. As noted above, pools loughs and rivers were the sites of ritual deposits in the Bronze and Iron Ages. Holy or healing wells continue to be venerated today. Remote places are used for reflective contemplation, including the early monastic sites Inishcaltra and Scatterry Island. The continued veneration of traditional mass rocks, wells, burial grounds, cillin, leacht and churches has incorporated them in penitential circuits or routes. Illustrative of these are the groupings of religious monuments within 100m of each other. Pagan prehistoric and early historic practice united concepts of ancestry, community and landholding, with prominent tombs providing visual markers of a community or person's relationship with the land. Prominent places overlooking the sea were also sought (as the Swedish Geats buried Beowulf, in the poem of the same name). Today people still look up to cairns and tombs on the skyline, or climb the heights to view the countryside or seascape from the same vantage points as our predecessors. Such cairns and tombs continue to provide visual references to our world (e.g. Carn Bodhar in the Burren). The views to and from such cairns and tombs over 500 ft in elevation, stretch out across Galway bay and into the high drumlins south-west of Corrofin.</p>	<ul style="list-style-type: none"> • Plantations or windfarms obscuring views of and from high prehistoric tombs • Decline in penitential practices – wakes etc • Roadside development near wells and small monuments • Creation of secure roadside gardens etc – removing the ease of access between religious or ritual monuments

4.1

INTRODUCTION

The following sections describe in detail the 21 Landscape Character Areas (LCAs) identified by the assessment team. These are accompanied by a map indicating the key landscape area boundaries (Figure 8). The evaluation comprises:

- a typical photograph;
- a list of the LCTs which are found in the LCA;
- a list of the habitat types which are found in the LCA;
- a description of the HLTs which are found in the LCA and a summary of the key characteristics;
- a written description of landscape character (including geology and landform, land cover and land use, ecology and human influence);
- an assessment of landscape condition and sensitivity to change; this includes references to designations under the county development plan though are not an exhaustive listing;
- a summary of the pressures and forces leading to change. This is mainly devised from fieldwork and the public consultation process; and
- principles for landscape management.

The landscape character areas are presented in *Table 4.1* below.

Table 4.1 Landscape Character Areas

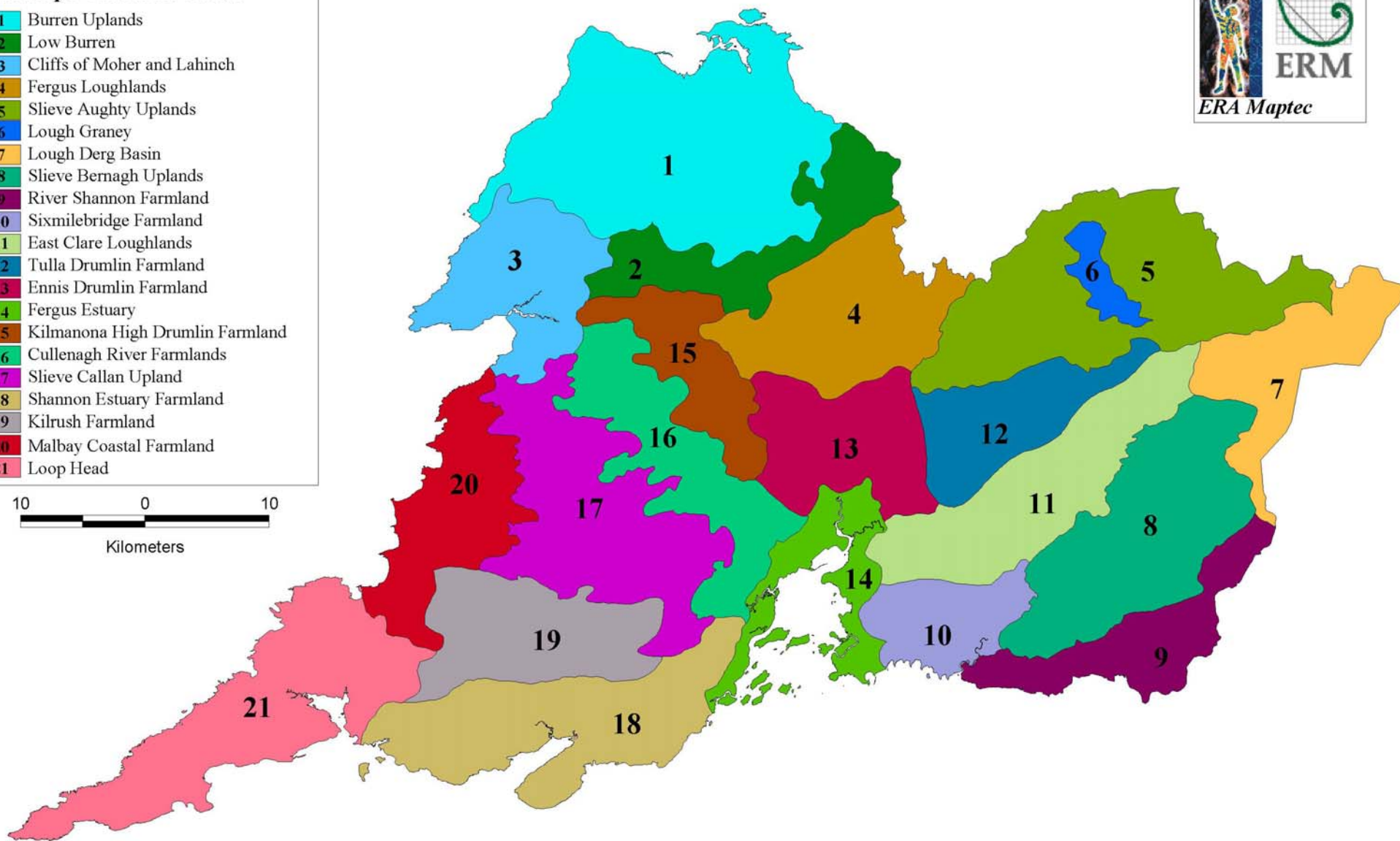
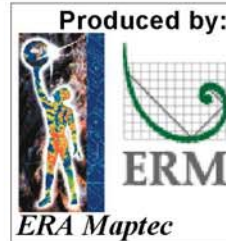
LCAs	LCTs	HLTs
1. Burren Uplands	CLS, LU, CF	EL1-4, RG1-3, BL, EI, WB1, EI, CI, D, DR
2. Low Burren	LF, LP	EL1-4, RG1-3, BL, DL, S1, WB1, D, R, DR
3. Cliffs of Moher and Lahinch	CF, CP, FEF	EL1-4, RG2-3, DL, EI, S1, S2, R, WB1, EI, CI, D, DR
4. Fergus Loughlands	LF, LLP	EL1-4, RG2-3, DL, EI, S1, S2, R, WB1, EI, CI, D, DR
5. Sliabh Aughty Uplands	LF, LLP	EL1-4, RG1-3, BL, S1, WB1, DR
6. Lough Graney	LFWL	EL2-4, RG2-3, BL, WB1, DR
7. Lough Derg Basin	UH, UF	EL1-4, RG2-3, BL, DL, S1, S2, WB1, E1, DR
8. Sliabh Bernagh Uplands	FUV, LFF, GV	EL1-4, RG1-3, BL, DL, S1, DR
9. River Shannon Farmlands	UH, FUV	EL1-4, RG2-3, BL, DL, S1, S2, EI, DR
10. Sixmilebridge Farmlands	LFF	EL2-4, RG2-3, BL, DL, S1, S2, A, WB1, EI, DR
11. East Clare Loughlands	UH, UF	EL1-4, RG2-3, BL, DL, S1, S2, R, WB1, DR
12. Tulla Drumlin Farmland	UH, UF, GV	EL2-4, RG2-3, BL, DL, S1, WB1, DR
13. Ennis Drumlin Farmland	RVF	EL1-4, RG2-3, BL, DL, EI, S1, S2, R, WB1, EI, DR
14. Fergus Estuary	RVF	EL2-4, RG2-3, DL, S2, A, R, EI, DR

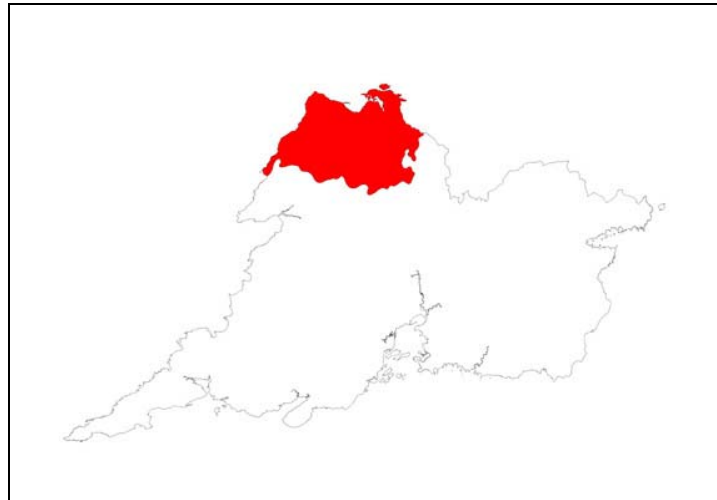
LCAs	LCTs	HLTs
15. Kilnamona High Drumlin Farmland	DFWL	EL1-4, RG2-3, BL, DL, WB1, DR
16. Cullenagh River Farmlands	LDF	EL1-4, RG1-3, BL, DL, WB1, DR
17. Sliabh Callan Uplands	LDF, URBAN	EL1-4, RG1-3, BL, DL, WB1, DR
18. Shannon Estuary Farmlands	FEF	EL1-4, RG1-3, BL, DL, EI, S2, WB1, EI, DR
19. Kilmihil Farmlands	HDF	EL2-4, RG2-3, WB1, DR
20. Malbay Coastal Farmlands	LDF	EL1-4, RG2-3, CI, D, DR
21. Loop Head Peninsular	UH, MH	EL2-4, RG1-3, DL, EI, S1, WB1, WB2, EI, CI, DR

Throughout this chapter the terms *degraded*, *moderate* and *better* are used to help describe the quality of the landscape. The terms are used for clarity in the context of this report and have not been taken from the DoE Landscape Guidelines. The word degraded infers that the landscape character area is not well maintained and has no strong character attached to it. Moderate is a cross between better and degraded, the area is not as degraded or tainted as in a degraded landscape and an improvement in the character is evident. Finally better deduces that character area is more intact and that there is a stronger sense of integrity.

**Figure 8 County Clare:
Landscape Character Areas**

- 1 Burren Uplands
- 2 Low Burren
- 3 Cliffs of Moher and Lahinch
- 4 Fergus Loughlands
- 5 Slieve Aughty Uplands
- 6 Lough Graney
- 7 Lough Derg Basin
- 8 Slieve Bernagh Uplands
- 9 River Shannon Farmland
- 10 Sixmilebridge Farmland
- 11 East Clare Loughlands
- 12 Tulla Drumlin Farmland
- 13 Ennis Drumlin Farmland
- 14 Fergus Estuary
- 15 Kilmanona High Drumlin Farmland
- 16 Cullenagh River Farmlands
- 17 Slieve Callan Upland
- 18 Shannon Estuary Farmland
- 19 Kilrush Farmland
- 20 Malbay Coastal Farmland
- 21 Loop Head





Key Characteristics

- Classic limestone karst scenery, rising to about 300m with numerous limestone features including pavement and caves.
- Vegetation is sparse and is confined to lower more sheltered slopes, where hazel scrub is seen, and the farmed coastal shelf where mature trees and bushy hedgerows are seen. Area is renowned for high diversity of arctic-alpine flora.
- Numerous historical features including wedge tombs and dolmens.
- Extensive limestone walls are a strong characteristic of this area, reflecting proximity of geology to the surface.
- Sparse settlement on higher slopes increases on lower slopes of coastal farmland.
- Long views are afforded from the higher slopes across the limestone pavements and over to Galway Bay and the Aran Islands, elsewhere views are limited due to wooded nature of landscape and narrow roads.
- Isolated and remote character in exposed limestone areas, this is combined with a more intimate landscape in lower areas.

Typical Photograph: Burren Uplands



Landscape Character Types, Historic Landscape Types and Habitat Types

LCTs	HLTs	HLT codes	HTs	HT codes
Limestone Upland	Enclosed Land 1	EL1	Exposed calcareous rock	ER 2
Limestone Valley	Enclosed Land 2	EL2	Scrub	WS 1
Coastal Limestone Slopes	Enclosed Land 3	EL3	Improved agricultural grassland	GA1
Coastal Farmland	Enclosed Land 4	EL4	Turlough	FL6
Limestone Plateau	Rough Ground 1	RG1	Stonewalls and other stonework	BL1
Limestone Farmland	Rough Ground 2	RG2	Wet grassland	GS4
	Rough Ground 3	RG3	Limestone lake	FL3
	Broadleaved Woodland	BL	Dry siliceous heath	HH1
	Water Bodies 1	WB1	Dry calcareous and neutral grassland	GS1
	Extractive Industries	EIQ		
	Coastal Intertidal	CI		
	Dunes	D		
	Devotional and Ritual	DR		

Landscape Character Area Extent.

The largest of the LCAs, the Burren Uplands, covers the north west of the County, from Sliabh Carran and Sliabh Elva northwards to Galway Bay, along the Atlantic coast to Doolin. The ridge of mountains provides the natural eastern boundary of this LCA from Mullaghmore to Cappaghmore in Galway. This distinctive upland area is composed of limestone pavement, terraces and cliffs interspersed with lush valleys sloping to the coast.

Geology and Landform

The bedrock in this area is composed of a variety of limestone series, with limited amounts of Namurian shale and sandstone shale underlying the slopes of Sliabh Elva and Poulcapple. Peat deposits and till are found on these shale areas, whilst elsewhere, as evidenced through the limestone pavements, the bedrock is found within one meter of the surface. This exposed bedrock is interspersed with limestone derived till.

It is the limestone features that dominate the area and frequently create a dramatic rocky landscape. The bedding planes and jointing of the limestone, exposed by glacial erosion during the most recent glacial period, shape the landscape. Sloping and horizontal bedding planes are seen, devoid of a covering of soil. The limestone terraces that slope into the sea in the north and west provide further landscape interest. Surface drainage is absent with the exception of the unique turloughs and the surface river of Caher, a spring fed stream that enters the sea at Fenore. The other surface river, the Aille, enters at Doolin Bay. This karstic environment has created a network of subterranean drainage systems such as the ancient cave system at Aillwee (thought to date back to the previous interglacial period, 120–132,000 years ago) to the more recent simple stream cave of Polldubh on the western flank of Sliabh Elva. Further karstic features are evident, most notably the extensive areas of limestone pavement, sinkholes and turloughs.

Landcover and Ecology

Whilst this dramatic landscape is frequently composed of exposed limestone with very thin soils, it is interjected by lush limestone valleys in parts. The majority of soil within this area is rendzina, a thin, well-drained, organic brown earth that is highly productive. Limestone grassland (GS1) is the predominant vegetation on these soils.

In the valleys, there is greater shelter and hazel predominates, with some holly, ash, whitethorn and blackthorn. Extensive hazel scrub is also evident in lower elevations, particularly where grazing regimes have declined. Along the coastal areas, coastal grass species such as bladder campion and bird's foot trefoil are found. Fanore Dunes are regarded as one of the best dune systems within the county with a distinctive dune slack composed of limestone pavement. The trees on the higher limestone areas are windswept, frequently hawthorns, leaning distinctively eastwards away from the prevailing winds. Limited amounts of blanket bog around Sliabh Elva are largely covered in coniferous forestry around the southern slopes, due to the presence of thicker soil deposits. In between, coniferous plantations are open heathy areas, creating a more remote and isolated feel.

The Burren Uplands are internationally recognised for their flora and fauna diversity with a high number of Annex I species, as evidenced by the high number of Special Area of Conservation designations (e.g. Black Head to Poulisallagh complex, Moneen Mountain and Ballyvaughan Turlough) and the designation of Burren National Park in the southern part of area.

Despite what might now seem like unfavourable farming conditions (the exposed rock, the lack of river systems etc), the area undoubtedly attracted Neolithic farmers. Today, some 60 per cent of the Burren is bare rock or rocky pasture (Drew 1997), but it is generally agreed that during the early post-glacial period the area was covered by a thin soil with natural woodland and scrub. The density of prehistoric remains in the Burren, from the Neolithic period onwards, is remarkable and may well reflect a genuine population density. In particular, the dense concentration of wedge tombs in the Burren may be explained by the 'valuable grazing resources' on the uplands (Stout and Stout 1997, 37). The lower eastern part of this area was probably widely settled in prehistory and virtually every square kilometre has four, five or six historic monuments and large numbers of megalithic tombs can be found throughout.

The slopes from the higher Burren to the shores of Lough Bunny are predominantly rough grazing but lack the extremely large parcels of the higher Burren. It also has isolated patches of the most common mixed field type in Clare – a mixture of sinuous and straight boundaries with moderate-sized fields more commonly associated with the drumlin belt.

The more elevated areas are predominantly made up of rough ground and seasonal grazing which has had several bouts of enclosure leaving some parcels of land over 1km square. Some field boundaries go back to the Cistercian organisation of Corocomroe Abbey, which had a major impact on the area as their holdings were farmed directly by lay brothers. Some farms along the coastline were laid out as strips or 'ladder farms' in a model reorganisation following the construction of the coast road, whilst a few field boundaries clearly predate its construction. They tend to be of smaller fields with sinuous boundaries appropriate to small-scale subsistence production – a type of farming still undertaken by farmers in the valley bottoms. In later times it was principally seasonal pasture. Ringforts abound and there are frequent holy wells, mass-rocks and other remnants of open-air worship. Enclosures are seen across the area, and are particularly distinctive on former commons such as Commons North and Tullycommon.

Numerous old stone cottages with outbuildings suggest previous denser population levels within the area and subsequent population decline probably Famine and post Famine.

The distinctive field boundaries remain apparent on sloping coastal limestone farmland, with rectangular or square fields enclosed by low stone walls. The exception to this is around Sliabh Elva where post and wire fencing predominates the forestry plantations. A network of roads crosses the area, including old tracks such as the Green roads. In lower areas, narrow roads are frequently bounded by hazel and hawthorn hedgerows creating attractive tunnel-like roads. There is very limited settlement on the more elevated areas, and housing styles are generally in the form of traditional cottages, vernacular in style with steep pitch and adjacent farm buildings. In the lower areas, settlement is denser in the valleys, with occasional two storey dwellings. There are some bungalows likely to have been built in the 1970s. Thatched cottages sometimes are seen along the coastal shelf. Lisdoonvarna, famed for

its matchmaking festival and Spa town, is the principal settlement within the area and increased settlement radiates from this centre and along the main road (N67 and R476). Other villages include Ballyvaughan and Doolin. The area is crossed by the Burren Way.

Consultees identified the uniqueness of the Burren Uplands as a valued feature, combined with the sense of remoteness, the tranquillity of the wooded areas and the vernacular architecture scattered throughout the area. It is considered to be one of the best preserved agricultural landscapes in Europe and many consultees placed a high value on this historical lands use aspect, mentioning key elements such as tombs, thuiles, turf mounds, goats structures, herdsman houses and the old roads. Upper Caher Valley was identified as an important medieval landscape due to the extent of field boundaries and cashels. Other features included the man-made walls at Ballybreen, the green sands at Ballyvaughan, Cahora valley stream, Aille river and other river valley walkways. The views from Doolin to Lisdoonvarna and the dip at Meggah west were also considered to be of high landscape value. Feral goats were identified as pests, but were considered to produce the best goat meat in the country.

Landscape Condition and Sensitivity to Change

This area retains a wild and remote feel, particularly from upland locations. The condition of the area is exceptional, with extensive areas remaining intact and managed, as reflected by exposed limestone, flora of international importance and the presence of numerous historical remains. Modern insensitive development is seen on some fringes, but the area is largely undeveloped due to its barren and waterless nature. Sensitive visitor management is a key issue and some erosion is present around important tourist sites and the need for traffic management requires attention, again at the honeypots. The Aillwee caves are a good example of sensitive visitor facilities, where it has blended well into the surrounding landscape and has a low visual impact. Some detractors affect the area, such as prominent masts on Sliabh Elva. The open aspect and high elevation allows views to and from historic cairns and ringforts (such as Dobhach Bhrainn and Cathair Dhuin Irghuis on the Black Head).

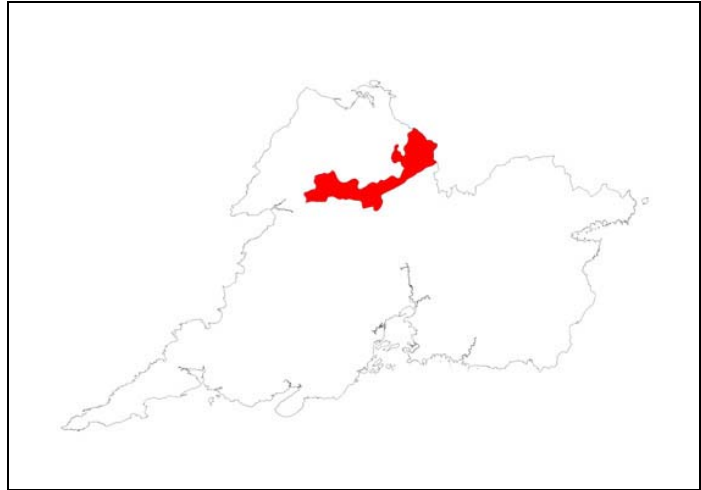
The area would be highly sensitive to any change. It is a fragile ecosystem and is very open, so any development would be highly visible. Change is occurring as grazing pressure is declining in some areas, allowing regeneration of hazel scrub. This can mask the distinctive landform and historical features. This semi-natural vegetation of international importance would be very sensitive to changes in agricultural practice, particularly changes in grazing regimes and therefore should be managed carefully. Numerous locations within the Burren uplands are classified as visually vulnerable or high amenity under the current county development plan.

Forces for Change

-
- Agricultural change, in particular decline and subsequent hazel encroachment; intensification in the lower valleys
 - Tourism pressures
 - Development of mast and pylons in high visually prominent places
 - Traffic pressures on narrow roads
 - Impacts on flora and limestone pavement
 - Damage to dunes at Fenore
 - SAC designation
-

Principles for Landscape Management

-
- Maintain ecological and landscape diversity through increased tailoring of REPS to Burren Uplands
 - Implementation of a tourism and traffic management strategy for the Burren area and review of tourism tax incentives
 - Ensure consistency between objectives of state agencies operating within the Burren Uplands
 - There should be careful siting and design of new developments away from highly visible locations with guidance provided on appropriate styles, boundary treatment and siting options
 - Promote retention and enhancement of elements such as limestone walls and vernacular housing styles
-



Key Characteristics

- This is an area of extensive exposed limestone creating rocky plains affording long extensive views. Where the soil is thicker, areas of rich limestone pasture predominate, interspersed with a number of surface water features, principally loughs.
- Distinctive limestone walls, comprising of vertical and diagonal slabby pieces of limestone.
- Source of the River Fergus and partly within National Park Boundary.
- Important settlements of Kilfenora and Corrofin, contrast with more remote northern limestone area.
- Terraced slopes of Sliabh Carran dominate the view to the west.
- Burren National Park covers part of the area.
- Historic monuments, such as megalithic tombs and castles are frequent

Typical Photograph: Low Burren



Landscape Character Types, Historic Landscape Types and Habitat Types

LCTs	HLTs	HLT code	HTs	HTs codes
Limestone Farmland	Enclosed Land 1	EL1	Exposed siliceous rock	ER2
Low Limestone Pavement	Enclosed Land 1	EL2	Scrub	WS1
	Enclosed Land 3	EL3	Wet grassland	GS4
	Enclosed Land 4	EL4	Improved agricultural grassland	GA1
	Rough Ground 2	RG2	Limestone lake	FL3
	Rough Ground 3	RG3	Turlough	FL6
	Broadleaved Woodland	BL	Coniferous plantation	WD4
	Designed Landscape	DL	Broadleaved woodland	WD1
	Settlement 1	S1	Dry calcareous and neutral grassland	GS1
	Water Bodies 1	WB1	Hedgerows	WL1
			Stonewalls and other stonework	BL1
	Dunes	D		
	Recreational	R		
	Devotional and Ritual	DR		

Landscape Character Area Extent

This narrow LCA skirts the Burren Uplands and stretches from the Galway border, along the R460 encompassing Corrofin and Kilfenora. Lickeen Lough provides its western boundary.

Geology and Landform

As the name suggests, this area is predominately composed of bedrock similar to the Burren Uplands, i.e. a variety of limestone bedrocks. In the south western part of the LCA, there is a narrow strip of Namurian shales, part of the belt that skirts Sliabh Elva. The most southerly part of this LCA becomes part of the extensive Namurian sandstone shale that covers the majority of Clare west of Ennis to Loop Head. Surface geology reveals significant amounts of exposed bedrock, evidenced by the limestone pavement, running in a northeast-southwest orientation and continuing over to Galway. This is interspersed with limestone derived till, small alluvial and peat deposits near to the loughs, and shale and sandstone derived till in the southern area. The valley of Glencolmcille is distinctively framed by the hills of Mullaghmore and Turloughmore, creating a very attractive valley landscape. The remainder of the area is gently undulating with low drumlins west of Corrofin.

Landcover and Ecology

Rendzina is the predominant soil type, creating productive grasslands. The soil type change to gleys, grey brown podzolics and peats where the shales and sandstone are predominant. Extensive limestone pavement in the northern part of this LCA is interspersed with grassland (GS1 and GA1) and occasional pockets of coniferous forest plantations. Elsewhere, grassland predominates within this area.

The limestone pavement, calcareous grasslands and lakes found within this area and the Burren National Park are of international significance with a number of Annex I habitats and species. Streams and rivers drain towards Liscannor Bay, with the Fergus River Valley, and Lickeen and Inchiquin Loughs adding diversity to the landscape. The Fergus Valley is very attractive with mature riparian vegetation, and the loughs often contain reed bed fringes. Lough Inchiquin in particular is framed by a steep escarpment on its southern border and this is heavily vegetated with deciduous woodland.

Historical & Human Influences

Mostly rough ground divided by sinuous boundaries in the northern limestone area, with large numbers of visible monuments, including a significant concentration of holy wells and fulachta fiadh, as may be expected in areas close to water. A fine example of a holy well may be found just outside Corrofin, and is known as the 'Blessed Tree'. Irregular fields with straight sides, which are largely determined by the landform, divide the low drumlin farmland. However they are of a size and shape compatible mostly with the use of farm machinery. Some of the boundaries may be older but the over-all pattern is one of post-mediaeval family farms oriented to market production. North of Kilfenora is a limestone area thick with historic monuments. Kilfenora itself was an important diocesan centre in the Middle Ages when the church encouraged and dominated much commerce and long-

distance exchange. This may have encouraged a certain market orientation amongst the local farmers. Its ruined church is still an important focus for visits and could equally fall within the Recreational or the Devotional orbit, depending on the inclination of the visitor.

In the south of the area, Inchiquin was historically a power centre, having both access to good farmland and reasonable security on island and lakeside locations. The romantic associations and good vistas over the lake led to subsequent development of parkland on the west side of Inchiquin Lough. Deciduous woods survive from this park, when others in the neighbourhood have been removed as fuel. The village of Corrofin has grown at the junction of roads that Inchiquin commanded, a strategic transport route between two loughs (Inchiquin and Atedaun). It lies central to a belt of farms with irregular fields of straight boundaries (EL4) of a type common in improved farmland like that bordering the Fergus estuary. Surrounding this belt is rough grazing (RG2), a very traditional landscape of sinuous field walls surrounding unimproved pasture. This marks a distinct contrast and may have partly reflected differences in tenure in times past. However, it is likely that both landscapes were articulated, as the straight-bounded EL4 provided the labour intensive, high investment, dairy marketing, whilst the traditional RG2 had subsistence dairying and stock cattle.

Settlement is sparse in the northern part of this LCA, with isolated farmhouses and sheds, some of these are insensitively designed though many are in traditional styles. Limestone walls predominate where the bedrock is visible or close to the surface. Within the southern part, hedgerows, hedgebanks and earth topped limestone walls are present with ditches dividing linear fields in river valleys. Roads travel predominantly east-west reflecting the grain of the landscape. Development in this area is scattered and rural with development around the fringes of Corrofin; elsewhere villages such as Kilfenora retain their traditional and historical form and building style. This area retains a rural character, with long views provided across the loughs and from the more elevated areas.

For many consultees, the values ascribed to the Burren Uplands were applicable to this area also. The numerous fulachta fiadh, stone walls, Leamanagh Castle and the paystall at the fairgreen in Kilfenora were also specifically mentioned.

Landscape Condition and Sensitivity to Change

The area is in generally good condition, it is well maintained with a strong rural character, interspersed with small villages. The quality and sensitivity of the landscape increases towards the Burren National Park area. In some areas, inappropriate housing development has occurred. Such bungalows are a poor fit into their rural location. Insensitive expansion of existing settlements without appropriate screening would impact negatively upon character of the area, as would increased and uncontrolled expansion of tourist facilities.

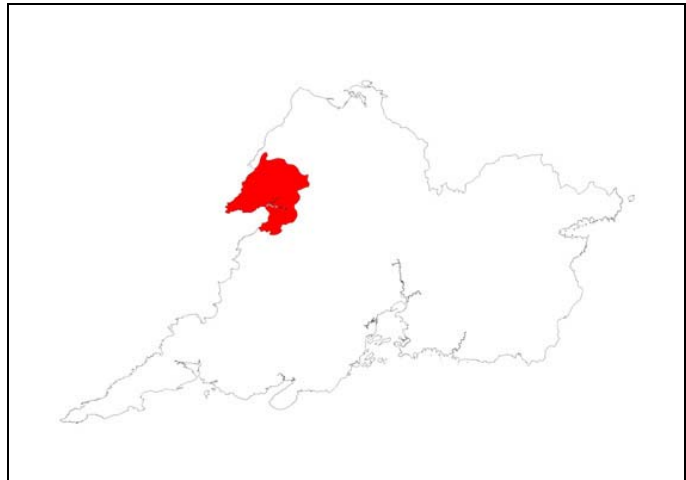
The area would be highly sensitive to change; the flat and unusual nature of the pavements would make any large development very visible. The National Park designation would support very careful management. Areas classified as visually vulnerable, sensitive or of high amenity within this LCA include grassland west of Lough Inchiquin, the banks of the River Fergus and the shores of Lough Lickeen and Inchiquin. The semi-natural vegetation of international importance would be very sensitive to changes in agricultural practice, particularly changes in grazing regimes, nutrient additions or ploughing and therefore these activities should be managed carefully.

Forces for Change

-
- Agricultural change, in particular decline with accompanying hazel scrub encroachment
 - Inappropriate development in prominent locations and inadequate consideration of a high water table in winter
 - Road improvements such as widening that do not reflect traditional boundary treatments and can urbanise the rural landscape
 - Extraction of limestone
 - Degradation of landscape features associated with the area such as limestone walls, earthbanks etc
 - Forestry applications at Lickeen Lough
 - Increased infrastructural development
 - Increasing the area of native woodland cover via the Native Woodland Scheme (Coillte 2003)
 - SAC designation
-

Principles for landscape management

-
- Small-scale development tucked into lower areas can be accommodated if sensitively designed and located. The more wooded areas can absorb limited development but must take due consideration of high ecological value
 - New tourist management facilities are best sited outside vulnerable areas
 - Road improvement schemes should be carefully designed
 - Native vegetation surrounding loughs and river valleys should be protected
 - Agricultural and environmental schemes should be promoted to avoid dereliction of landscape
 - Appropriate proactive planning policies need to be developed and implemented to protect sensitive areas
-



Key Characteristics

- An area of coastal plateau and farmland gently sloping inwards towards the coast and rivers.
- Liscannor stone walls with slaty appearance are highly distinctive and widely used throughout the area.
- Popular tourist centres at Cliffs of Moher, Lahinch and Liscannor.
- Extensive coastal views are afforded from bays and plateau.
- Away from the coastal road, it is increasingly remote and an isolated sense is retained.
- Character of sea strongly affects the area.

Typical Photograph: Farmlands near the Cliffs of Moher



Landscape Character Types, Historic Landscape Types and Habitat Types

LCTs	HLTs	HLT code	HTs	HT codes
Coastal Farmland	Enclosed Land 1	EL1	Rocky sea cliffs	CS1
Coastal Plateau	Enclosed Land 2	EL2	Improved agricultural grassland	GA1
Flat Estuary Farmland	Enclosed Land 3	EL3	Shingle and gravel shores	LS1
	Enclosed Land 4	EL4	Sand shores	LS2
	Rough Ground 2	RG2	Coastal constructions	CC1
	Rough Ground 3	RG3	Hedgerows	WL1
	Designed Landscape	DL	Montane heath	HH4
	Extractive Industry	EIQ	Embryonic Dunes	CD1
	Settlement 1	S1	Wet grassland	GS4
	Settlement 2	S2	Broadleaved woodland	WD1
	Recreational	R	Dry calcareous and neutral grassland	GS1
	Water Bodies 1	WB1		
	Extractive Industry	EI		
	Coastal and Coastline Intertidal	CI		
	Dunes	D		
	Devotional and Ritual	DR		

Landscape Character Area Extent

This area is defined on the west by the coastline south of Doolin to south of Lahinch, encompassing Ennistymon and bounded eastwards outside Kilfenora. This area is composed of plateau and farmland sloping gently towards the coast.

Geology and Landform

This area is underlain by Namurian sandstone shale. Peat deposits are located across the more elevated areas, in an east-west orientation. The majority of the area is till derived from the bedrock. However, along the Cliffs, bedrock is within one metre of the surface, creating the distinctive cliff features. The Cliffs are up to 203m high and extend for 7km northeast –southwest, formed from horizontal sandstones and shales, the lines of these cliffs show good faulting and slumping though this is not apparent from the cliff tops. A small pocket of shale gravel is located in the east, as well as limestone till. Around the wide bay of Liscannor, marine sands and gravel as well as sand dunes are apparent. A number of rivers such as the Tureen and the Ballymacravan are present throughout the area, with occasional loughs including Lickeen Lough draining into the River Dealagh, which enters the sea at Liscannor. The Inagh river (the Cullenagh river further east) also meets the sea at this location.

Landcover and Ecology

Soils in this LCA are largely gleys and peat, with pockets of brown earths, complexes and brown podzolics. Grassland predominates, though there is a considerable amount of wetter, peaty soils on the higher areas, with some coniferous forestry plantations on the fringes of these sites. There are also occasional pockets of natural grassland (GS1) along the cliffs and within pockets of well-drained peat areas.

Vegetation is limited with small windswept shelterbelts and occasional trees, usually hawthorn reflecting the Atlantic influence, the exception being an area of deciduous wood, close to Lough Goller. Within this area, there are a number of habitats worthy of note. The most renowned is the Cliffs of Moher, a Special Area of Conservation (SPA), and an internationally important site for breeding Razorbills, in addition to a number of other Annex I bird species. Maritime flora also adds considerable interest to this site, with a number of rare lichens. Lough Goller, south of Lisdoonvarna, is an NHA due to the occurrence of Spring Quillwort and reed beds, though the overall quality of the site has been degraded due to quite extensive afforestation. The valleys of the Inagh and Dealagh rivers also support wet grassland vegetation, with pockets of woodland including wet woodland and dry deciduous woodland. The Inagh River estuary is also designated as an SAC.

Historical & Human Influences

This is a varied upland area with roughly equal amounts of land in the three main field categories and an area of rough ground parcelled up in organised blocks south of Doolin. There are extensive areas of fields with sinuous irregular boundaries around the coast – some of which may be of significant antiquity but all of which represent a survival of older farming styles. Inland from them is an area of strip-fields, which may be enclosed common fields and around the edges there are irregular fields with straight boundaries – possibly modern. An example of such an area lies west of Liscannor

where three 'Designed Landscapes' relate to the parks or demesnes of the major landholders near to Liscannor, Lahinch and Ennistymon, the last of which incorporates a castle. The mouth of the Inagh River includes a discrete area of open land behind the dunes.

Visible monuments concentrate around the central, strip-field area and near to Liscannor. There are a number of holy wells and enclosures in the lower central area, with promontory forts at Lahinch and Coolrone. It is possible that a buried landscape survives below the dunes and floodplain south of the Inagh, where aeolian and alluvial deposits could have covered them.

This area is now largely composed of farmland enclosed by stone walls, with some fine examples of traditional cottages, usually with whitewashed single story farm buildings adjacent to house. Along the coastal road from Doolin, several thatched cottages are apparent. Liscannor stone and Moher slate is widely used within the area and creates a very distinctive landscape feature in the form of boundary treatments and housing materials. There is also considerable tourism activity concentrated along the coast, reflected in services provided at Lahinch and Liscannor. Tourist boat trips are available along the cliffs and the area is crisscrossed by a network of narrow roads. The Burren way follows much of the coastline within this area.

Consultees identified Moher slate and the remnants of the West Clare Railway as being of particular value within this area.

Landscape Condition and Sensitivity to Change

The condition of this area is variable, with some areas degraded due to tourism pressures such as the approach to the Cliffs of Moher. The cliffs are spectacular, and the cliff top is very sensitive to development. The tourism pressures associated with the high number of visitors is apparent through the trampling effect along the cliffs, and the sprawl of tourism signs on the approach to this attraction. Furthermore, tax incentives for coastal development, predominately on the outskirts of Liscannor and Lahinch, have resulted in considerable urban sprawl of highly unsympathetic housing styles that detract from the towns and their environs. Generally, all of the above issues detract from the overall character of this area.

Away from the main tourism routes, this area feels increasingly remote and though highly exposed, is still largely intact. However, due to the lack of natural screening by vegetation and the exposed landscape, this area is highly sensitive and development at higher levels would be very visible as the current mast at Knocknalarabana illustrates.

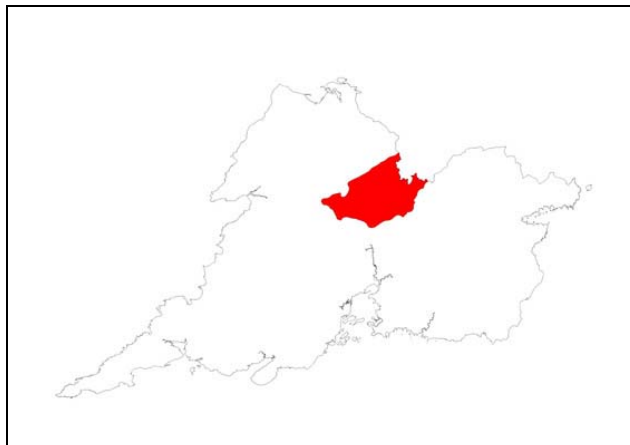
Lahinch, the Dealagh River, lands south and east of Ennistymon are all classified as visually vulnerable and sensitive under the county development plan. The river Inagh and coastline are classified as areas of designated high amenity under the same plan.

Forces for Change

-
- The visitor facilities at the Cliffs of Moher and the current conflict associated with proposed management regimes
 - The potential disturbance to bird populations through tourist pressure at the Cliffs of Moher and possible pollution of watercourses near Lahinch due to tourist facilities expansion and inadequate infrastructure
 - Erosion at the Cliffs due to visitor numbers and traffic impacts, such as large coaches on narrow roads, limited access to Donegal Point, insensitive holiday home development and illegal road signage where numerous illegal signs at the Cliffs of Moher have been noted
 - Agricultural decline and degradation of key features such as stone walls
 - Potential for afforestation in areas where elevation is below the 750ft contour.
-

Principles for Landscape Management

-
- Generally any development should be directed to existing settlements and encourage reuse of old buildings
 - New development should be sensitive to landscape and reflect traditional design forms in siting, layout and boundary treatment
 - Traffic management plan for this area, in particular Lahinch, Liscannor and the Cliffs of Moher, in addition to a tourism management plan, will assist in better planning and protection of the landscape
 - Agricultural and environmental schemes to avoid dereliction of landscape should be promoted
-



Key Characteristics

- Undulating lowland mosaic of loughs, farmland and wooded limestone pavements.
- Loughs and rivers are oriented predominantly northeast to southwest reflecting historical glacial movements.
- Characteristic lowland limestone pavement in parts are vegetated with hazel scrub and is of high ecological value, e.g. Dromore Lough nature reserve.
- Important historical features include Dysert O'Dea.
- Area is largely rural in character dissected by quiet minor roads.
- Scattered settlement aside from the villages of Crusheen and Ruan.

Typical Photograph: Lough Bunny



Landscape Character Types, Historic Landscape Types and Habitat Types

LCTs	HLTs	HLT Codes	HT's	HT Codes
Limestone farmland with loughs	Enclosed Land 1	EL1	Improved agricultural grassland	GA 1
	Enclosed Land 2	EL2	Scrub	WS1
	Enclosed Land 3	EL3	Wet grassland	GS4
	Enclosed Land 4	EL4	Broadleaved woodland	WD1
	Rough Ground 2	RG2	Limestone lakes	FL3
	Rough Ground 3	RG3	Dry calcareous and neutral grassland	GS1
	Designed Landscape	DL		
	Extractive Industry Quarry	EQ		
	Settlement 1	S1		
	Settlement 2	S2		
	Recreational	R		
	Water Bodies 1	WB1		
	Estuarine Intertidal	EI		
	Coastline and Coastal Intertidal	CI		
	Dunes	D		
	Devotional and Ritual	DR		

Geology and Landform

This area is underlain almost totally by various limestone bedrock, with a narrow central strip of chert. Low lying, limestone bedrock is common and is combined with extensive areas of limestone till creating low drumlins. Peat

deposits are also found around and between loughs, which are extensive within this area. The loughs, rivers and gentle drumlins are oriented predominately northeast to southwest reflecting historical glacial movements. The Fergus catchment strongly influences this area, with a number of tributaries such as the Moyree and Castlodge rivers draining from the loughs and into the Fergus itself. The extensive belts of loughs are strongly characteristic of this area.

Landcover and Ecology

A variety of soils are found within this area, including rendzina, brown earths, grey brown podzolics, peats and complexes. This reflects the mixed nature of glacial deposits within the low drumlins. This soil diversity is also reflected in the landcover, with a majority of grassland, combined with pockets of natural grassland (GS1), mixed forest, scrub and wetlands, with blanket bog at the eastern boundary as it rises to Sliabh Aughty.

This is a highly diverse and rich LCA in ecological terms, evidenced by the high number of nature designations. The majority of loughs are unspoilt and semi-natural with deciduous woodland fringes. The Ballyeigher lake complex includes Dromore Woods and the Moyree River. It is composed of a network of calcareous loughs, turloughs, fens, cutaway bog and calcareous marsh habitats. This ecosystem is of significant ecological value and interest, as it is extremely rare and many of these habitats are listed as Annex I habitats. Dromore Woods are very diverse and encompass limestone pavement, scrub, broadleaved and mixed woodland, loughs, fen and reedbeds. Derrymore wood, as its name (Doire mór) suggests, is a small but fine example of a puck oak-holly woodland. In total, this area has nine SAC designations reflecting its high diversity and good condition.

Historical & Human Influences

Between the loughs and watercourses, the land has been parcelled into rough ground divided by sinuous boundaries or fields with straighter (though still somewhat sinuous) boundaries. Both probably represent market-oriented agriculture. There are notable patches of historic woodland. The limestone, in common with other limestone areas, has preserved a high number of visible monuments, this time in an area with extensive road communications. The loughs provided important seasonal food resources in the past and probably preserve fish traps, which are under-recorded in the archaeological record. They are also likely to contain Bronze or Iron Age ritual deposits of financial and academic interest. They also contain a vital resource in crannogs – lake settlement with preserved organic remains – sensitive to alterations in water level. A line of holy wells line the small road running south from Dysert O’Dea, which was an important devotional centre and may be thought to form a particular historic landscape.

This area is predominately rural in character dissected by quiet minor roads with traditional settlement scattered across the area in the form of single and

two storey isolated farmhouses. Limestone walls including large blocky stones are characteristic where surface limestone is apparent, elsewhere mature hedgerows are evident. The villages of Crusheen and Ruan are the only nucleated settlements and the area is accessed by an extensive network of roads. The busy N18 between Gort and Ennis passes through this area.

Landscape Condition and Sensitivity to Change

This is a highly attractive and well-maintained landscape. The natural vegetation affords significant screening and can create an intimate landscape in many areas. This contrasts with the more open exposed character around larger loughs and limestone pavement. It is a highly distinctive landscape with the variety of landscape forms, specifically loughs, low drumlins and limestone pavement combining to create an intact landscape area.

Due to the frequently wooded nature of the landscape, small-scale development could be accommodated. However screening would be necessary and due care requested with regards to water quality. There are a number of derelict properties, sympathetic to the environs that should be promoted for restoration. However, the area as a whole would be very sensitive to large scale and unsympathetic development and changes, which would affect the condition of limestone and loughs.

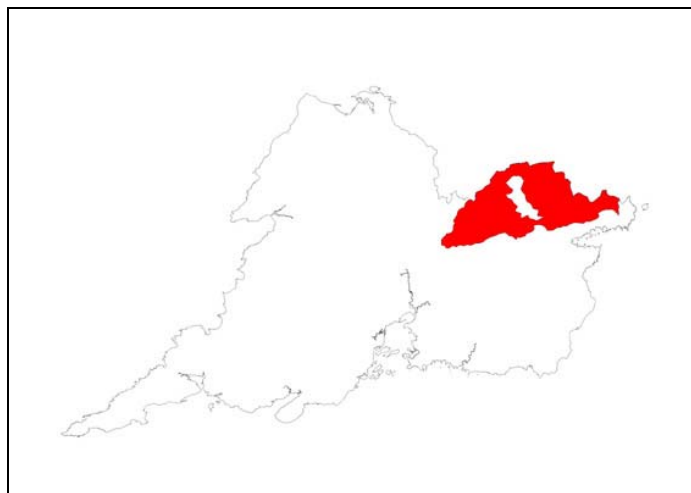
The broadleaved area south of Dromore are classified as visually vulnerable or sensitive, and the loughs within this area are designated as high amenity areas under the County Development Plan.

Forces for Change

-
- Changes in farming practices, both the decline and resultant loss of traditional landscape components including stone walls, hedgerows and scrub encroachment, or intensification and run off to loughs.
 - Inappropriate modern development and dereliction of older properties
 - Drainage of wetlands
 - Inappropriate development in terms of siting, design and treatment
 - Potential recreational pressure on loughs
-

Principles for Landscape Management

-
- Protect the natural shoreline vegetation and water quality
 - Provide incentives for the restoration of derelict properties
 - The siting and design of recreational facilities should be carefully considered to avoid visual intrusion
 - Direct new development to areas afforded natural screening and provide guidance on siting, location and boundary treatment of new development
 - Promote agricultural and environmental schemes to avoid dereliction of landscape
 - SAC and NHA designations should act as drivers for controlling landuse
 - Monitor water quality carefully as the catchment is very important
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Key Characteristics

- Open and forested rolling moorland hills reaching 400 m at Maghera and extending over to the wider Sliabh Aughty range in Galway.
- The vegetation is dominated by blanket bog with plantation forests and semi-natural deciduous woodland on lower slopes and along watercourses.
- Very sparse settlement confined to lower fringes with bungalows affording panoramic views.
- Megalithic tombs are a feature, as well as holy wells on lower slopes.
- Sparse communications include narrow roads and tracks on the fringes. The area is crossed by the East Clare Way (a long distance footpath).

Typical Photograph: Montane Heath of Sliabh Aughty



Landscape Character Types, Historic Landscape Types and Habitat Types

LCTs	HLTs	HT codes	HT's	HT
Upland Hills	Enclosed Land 1	EL1	Coniferous plantation	WD4
Upland Fringe	Enclosed Land 2	EL2	Montane heath	HH4
Forested Upland Valley	Enclosed Land 3	EL3	Scrub	WS1
	Enclosed Land 4	EL4	Marsh	GM1
	Rough Ground 1	RG1	Wet grassland	GS4
	Rough Ground 2	RG2	Hedgerows	WL1
	Rough Ground 3	RG3	Improved agricultural grassland	GA1
	Broadleaved Woodland	BL	Broadleaved woodland	WD1
	Settlement 1	S1	Limestone/marl lakes	FL3
	Water Bodies 1	WB1		
	Devotional and Ritual	DR		

Landscape Character Area Extent

This upland encompasses the northeastern boundary of the county, stretching from the Derrywee river on the Galway side over to the village of Whitegate and extending southwest along lower slopes, fringing Lough Graney and including Maghera. This area is part of larger extensive mountainous area extending across the county boundary into Galway.

Geology and Landform

This area is underlain by extensive Old Red Sandstone surrounding higher and much older areas of Palaeozoic siltstone and shale. These create the rounded upland hills of this LCA. There are a small but significant number of upland areas where the bedrock is found within one metre of the surface, a testimony to glacial erosion in this upland area. This is combined with quite extensive peat deposits, large tracts of sandstone and shale derived till. On the eastern boundary, closer to Lough Derg, there are interbedded tills and gravels, again derived from sandstone. There are occasional limestone outcrops on lower slopes.

Landcover and Ecology

Peats and complexes constitute the principal soil types within this LCA. There are also small areas of brown earths and gleys. It is largely a mixture of open moorland and coniferous plantation forestry. The extensive blanket bog has been planted extensively by mostly coniferous plantations, though there still remains a considerable number of open areas that are more wet heath than blanket bog. On the upper open areas, low intensity grazing is seen with areas under commonage and evidence of turbury. The commonage at Bohatch is one of the largest in the county.

Grassland predominates on the lower slopes with increasing pasture, occasionally interspersed with small pockets of natural grassland. In particular, the southern slopes, around Derryulk, are more pastoral, though still upland in character with large blocks of forestry. There is very little natural woodland, though scrub encroachment can be seen in abandoned areas. There are a number of small streams that incise the slopes and provide narrow strips of riparian, deciduous vegetation. The Bleach River rises in the only significant lough in this area, Lough Atorick, and features a waterfall before continuing on to the larger Lough Graney. The relatively small number of remaining intact bogs within this area, including Lough Atorick South bog, Pollagoona Bog and Glendree Bog, are all designated as SACs.

Historical & Human Influences

The area around Sliabh Aughty was never heavily settled and there are few visible monuments. It is an area of rough ground that was previously common pasturage and turf production. It is largely devoid of standing monuments although the proviso should be made that it also covers landscapes farmed during the climatic optimum. Peat also preserves organic remains. Lough Ea and Maghera may have been used for ritual deposits in the past even though the land was not intensively settled. On the northern slopes of Maghera, there is a distinct group of megalithic tombs and standing stones and nearby historic church and holy wells on the slopes overlooking Drumondoora. It is hard to describe such a concentration as anything other than a long-lived devotional and ritual landscape. Its location at the boundary between enclosed

land and rough and the widespread view to the north can only have enhanced those functions.

A reasonable tract of good farmland, mostly EL2 but including a significant parcel of EL4, surrounds Feakle. Isolated fragments of broadleaved woodland like Bauregegaun (west of Feakle) are remnants of once widespread forest. Nearby place name evidence suggests oak woodlands survived into historical times. Derrybehagh is one of a group of Derry place names that extend into the Tulla Drumlin Farmland LCA.

There is limited enclosure of fields, with upland areas contained in parts by post and wire fences, ditches and very occasional remnants of stonewalls; on lower slopes there is an increase in hedgerows, sometimes with fuchsia.

Settlement is extremely sparse on the upper areas, and where it occurs, is confined to lower fringes with sheltered whitewashed cottages, or more recent bungalows affording panoramic views across Lough Derg. The villages of Whitegate and Feakle are the only nucleated settlements within this area. Communications are consequently very limited with narrow roads and tracks on the fringes. A very tall communication mast is sited at the summit of Maghera, with associated buildings and a surrounding no unauthorised access area. The area retains a very isolated, remote, upland and open character.

Consultees identified a number of valued features including Bidy Early's Cottage, the famine village of Ballycrown (below Maghera), a mass rock also on Maghera and the Collar of Gold find at Glendree, which may suggest further archaeological possibilities within this area. The folklore and traditional music associations with Feakle were also identified as distinctive cultural features within this area. The specific townlands of Bohatch, Turkenagh and Curracill were identified as being very remote, isolated and retaining a strong sense of being unchanged over time. Consultees considered these parts in particular to be very open, in part due to the lack of afforestation. Open heather areas within this LCA were also considered to be of significant wildlife value for species such as grouse.

Valued views include those towards Sliabh Bernagh and the East Clare Loughlands and views to Galway Bay from Knockmunna. In addition, the views from Feakle south west to the Fergus estuary and Moneypoint were identified as further enhancing the remote and upland sense of this area.

Landscape Condition and Sensitivity

The condition of this area is variable. Where open peaty areas are retained, a very strong and intact upland character is retained. This is interjected by extensive coniferous plantations. The older plantations are frequently blocky and unsympathetic to the landform, with straight edges. Clear felling has a significant landscape impact. The lower areas and valleys are generally in

better condition, with riparian woodland around the small streams and a more managed sense due to pasture production.

Clear felling in future if not very carefully managed will leave a large scar on the upland areas. In addition, some of the upper open areas would be sensitive to inappropriate housing development. Wide views are afforded from this area across to Lough Graney, the East Clare loughlands, Lough Derg and across to the Galway Sliabh Aughty range.

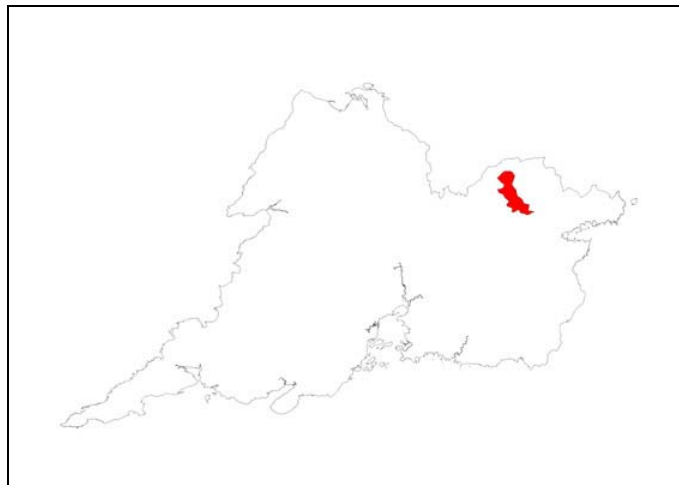
The lower slopes and peat bogs of Maghera are classified as visually vulnerable or sensitive in the county development plan. The skylines of Maghera to Derrynagullian and Knockbeha Mountain are designated as high amenity under the same plan.

Forces for Change

-
- Expansion of forestry at the expense of blanket bog and moorland that may mask older landscape features such as boundaries and historic remains
 - Impact of forestry access routes and clear felling
 - Further development of masts at summit of Maghera
 - Mobile phone masts
 - Illegal dumping as evidenced by high number of abandoned materials off roads.
 - Dereliction of farms and stone cottages and their replacement by modern bungalows not reflective of vernacular styles, and large scale corrugated barns etc
 - Rural depopulation within this area
 - Visual detractors such as masts and windfarms in prominent high points would interrupting remote character of the area
-

Principles for Landscape Management

-
- Careful consideration should be given to siting and planting regime of new forestry plantations, in small-scale irregular plantations with a good proportion of deciduous tree. Irregular edges following the landform and varied age structure will help prevent creation of large uniform blocks
 - Clear felling regimes need to be carefully managed so not to impact overwhelmingly on the landscape
 - Conserve open character of remaining areas
 - Maintain and encourage rural population through positive discrimination
 - Direct new development to lower slopes, reflecting existing pattern of development and using shelter provided from existing vegetation and landform; guidance should be provided on siting, location and style of new houses
 - Encourage restoration of derelict houses
-



Key Characteristics

- Natural lough in the river Graney catchment, orientated north west to south east surrounded by undulating farmland and forested hills.
- Highly scenic area with recognised ecological value.
- Occasional wooded islands scattered around the Lough such as Green Island.
- Sparse settlement along shoreline and scattered settlement elsewhere throughout area.
- Strong cultural associations with Brian Merriman and the Midnight Court.
- Views afforded across the Lough to the surrounding Sliabh Aughty mountains.

Typical Photograph: Lough Graney and Hinterland



Landscape Character Types, Historic Landscape Types and Habitat Types

LCTs	HLTs	HLT codes	HTs	HT codes
Forested Upland Valleys	Enclosed Land 2	EL2	Coniferous plantation	WD4
Loughside Farmland	Enclosed Land 3	EL3	Scrub	WS1
Glacial Valley	Enclosed Land 4	EL4	Marsh	GM1
	Rough Ground 2	RG2	Wet grassland	GS4
	Rough Ground 3	RG3	Improved agricultural grassland	GA1
	Broadleaved Woodland	BL	Broadleaved woodland	WD1
	Water Bodies 1	WB1		
	Devotional and Ritual	DR		

Landscape Character Area Extent

The Lough Graney area extends from north towards the Clare-Galway Border down to the confluence of the rivers Corry and Graney in the south. It is largely surrounded and framed by the Sliabh Aughty mountains.

Geology and Landform

This area is similar to the wider Sliabh Aughties, being underlain by Palaeolithic siltstone and shale, and a belt of Old Red Sandstone in the north. The lough itself was most likely carved out during the retreat of ice in the last glacial period, with a distinctive glacial valley continuing southeast from the lough between the uplands. Surface geology is predominately shale derived till, with small areas of sandstone derived till and occasional peat deposits, especially in the southwest fringe of the lough. This area contains much of the

Graney catchment with the Bleach river draining into the north of the lough, and the Graney river flowing from the south where numerous smaller rivers and streams join before it finally enters Lough Derg at Scarriff Bay.

Landcover and Ecology

Soils are largely gleys and brown earths, with pockets of peat and complexes. The lough shore itself is low lying and rushy and is often enclosed in parts of deciduous woodland fringe. Lough Graney woods (SAC) on the south east shore of Lough Graney is native mixed woodland of holly, hazel, oak, birch and ash with well developed ground flora including a number of ferns. Grassland in the form of pasture predominates the undulating farmland surrounding the lough. On the upper part of the catchment, coniferous forestry, with occasional mixed planting of Scots pine and birch and blanket bog occur. There is also some rough grazing within this area.

Historical & Human Influences

To the north of Lough Graney is an area of rough ground with sinuous boundaries indicating a surrounding area of strip fields. Both may be nineteenth century enclosures of common land (outfield and infield areas). It may be significant that the area of strip fields (putatively 'infield') contains three townlands with the prefix Derry, indicating it might also be intake of former oak forest. To the east and west of the lough are the usual irregular fields with straight boundaries and historic woodland near its southern shore.

In common with other loughs, Graney may preserve fish traps, crannogs and ritual deposits. Megalithic tombs occupy prominent points overlooking the lough. The area is renowned for its associations with Brian Merriman, who lived in the area for many years and set his poem 'Cúirt an Mhéan Óiche' (the Midnight Court), on the shores of Lough Graney.

Today, dense hedgerows, trees and earthbanks commonly enclose small field boundaries, creating a wooded and sometimes intimate landscape. Settlement is very sparse on the upper part of the catchment, though a number of narrow roads cross the catchment linking scattered settlement, generally comprising of individual farm units and cottages, with traditional two storey and whitewashed buildings present. Modern bungalows are also apparent and sometimes replace abandoned/derelict buildings or are on new sites. Villages are absent in this area, with the small settlements of Flagmount and Caher providing limited services such as post offices and a petrol station.

Small bays, inlets and occasional picnic areas and car parks are apparent along the lough shore, and the lough has good fishing. The East Clare Way passes through this area, principally following the shoreline.

Consultees valued this area for its rich historical and cultural elements, including the associations with Brian Merriman. The mosaic of habitats

contained within this relatively small area, including native forests, loughs, small fields and hedgerows were also valued by consultees.

Landscape Condition and Sensitivity to Change

This is a very attractive, highly rural landscape, with the numerous hedgerows and trees contributing to a wooded sense, and frequently creating an intimate landscape. The lough itself is the principal focus of the area, and the setting is highly scenic, with the lough framed by the surrounding uplands.

There are some detractors, including a highly visible dwelling at northern the end of Lough and insensitive afforestation that masks landform in parts. New development would be highly visible along lough shores and hills. However, the hedgerows afford some screening and small scale, sympathetic development could be accommodated. It would be important to try to retain the sense of remoteness within this area.

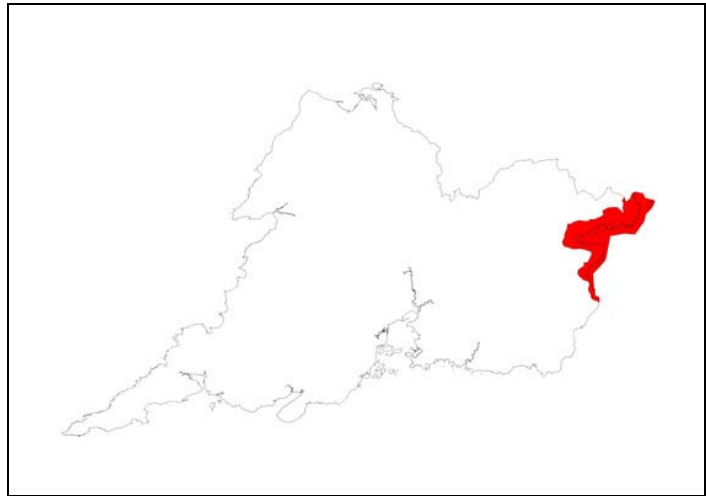
The roads around Lough Graney are identified in the county development plan as scenic routes, affording views and prospects.

Forces for Change

-
- Potentially inappropriate tourist development affecting characteristics of the lough area
 - Future inappropriate housing and holiday home development
 - Proliferation of loughside facilities such as water based activities and loss of deciduous woodland to accommodate this
 - Natural and man-made changes to water level and quality due to climate change, agricultural pollution, possibly leading to flooding of shore and inundation of islands
 - Changing farming practices either through intensification leading to larger field boundaries or abandonment and decline of maintenance of hedgerows and rush invasion of pastures
 - Dereliction of old farmlands and homesteads and replacement with modern, out of character bungalows
 - Insensitive upgrading of roads, affecting landscape character and historic features
-

Principles for Landscape Management

-
- Direct new development to use shelter provided from existing vegetation and landform; guidance should be provided on siting, location and style of new houses
 - Encourage restoration of derelict houses
 - Monitor water quality carefully as the catchment is very important
 - Any loughshore facilities should be carefully considered to minimise visual impact and avoid damaging lough fringe vegetation and water quality
 - Guidance should be available on any new planting regimes with emphasis on native species indigenous to the area
-



Key Characteristics

- Highly scenic area with recognised ecological value (SAC).
- Lough shores often enclosed by semi-natural deciduous woodland creating an attractive rural sense.
- Numerous wooded islands scattered around Lough including an important monastic sixth century settlement at Inis Cealtra.
- Settlement is relatively sparse along the shoreline with narrow roads running from shoreline to main road. A number of towns and villages such as Tuamgraney, Scarriff and Killaloe reflect the importance of the lough for communications.
- Long views afforded across the Lough to Arra Mountains in Tipperary and Sliabh Bernagh in Clare.

Typical Photograph: Lough Derg Basin



Landscape Character Types, Historic Landscape Types and Habitat Types

LCTs	HLTs	HLT codes	HTs	Ht codes
Loughside Farmland	Enclosed Land 1	EL1	Broadleaved woodland	WD1
	Enclosed Land 2	EL2	Hedgerows	WL1
	Enclosed Land 3	EL3	Tree lines	WL2
	Enclosed Land 4	EL4	Improved agricultural grassland	GA1
	Rough Ground 2	RG2	Coniferous plantation	WD4
	Rough Ground 3	RG3	Wet grassland	GS4
	Broadleaved Woodland	BL		
	Designed Landscape	DL		
	Settlement 1	S1		
	Settlement 2	S2		
	Water Bodies 1	WB1		
	Estuarine Intertidal	EI		
	Devotional and Ritual	DR		

Landscape Character Area Extent

This area is composed of Lough Derg, its shores and lower farmland extending from Clare-Tipperary-Galway Boundary along the Lough terminating at Killaloe and encompassing a number of towns and villages.

Geology and Landform

The areas surrounding the lough are composed of a wide belt of limestone from Scarriff Bay up to Portumna in Galway. Further south, towards Killaloe this is replaced by Old Red Sandstone and Lower Palaeozoic siltstone and shale that extends to the Sliabh Bernagh range. Limestone derived till dominates at the northern lough, interspersed with Devonian sandstone till

and quite large deposits of undifferentiated gravel. This is replaced further south by shale derived till adjacent to Sliabh Bernagh. It is low lying around the lough shore with gently rising land towards the foothills of Sliabh Aughty, Bernagh and Broadford Hills. The lough itself varies in depth, from a shallow 6m at the northern end with a trench in the middle of the lough that descends to over 25m in parts. Much of the lake lies on limestone, though the southern section shares the same bedrock as the surrounding land.

Landcover and Ecology

A diversity of soil types is found, reflecting the underlying geology. Gley predominates at the northern shore, whilst a stretch of brown earths extends south from Scarriff Bay. This is interspersed with pockets of brown podzolics, and peat close to the lough shore.

Landcover is overwhelmingly grassland, with pasture, silage and hay production. Broadleaf forest is frequent along the lough shore and on the numerous small islands that are scattered on the lough.

Lough Derg is designated in its entirety as an SPA and SAC. As the largest of the Shannon lakes it covers 13,000 hectares of non-tidal waters and contains five Annex I habitats, including yew woodland and petrifying springs. Important numbers of wintering wildfowl are supported as well, including Greenland White-Fronted Geese.

Historical & Human Influences

The slopes towards Lough Derg and the small drumlin area north of Scarriff is a patchwork of fields with sinuous and straight boundaries. A group of enclosures indicate prehistoric or early historic settlement on the spur from Caher Mountain at Carrowcore, Aughinish and Ballyhurly. The vantage point dominates the western slopes to the Lough and modern-day vistas with enclosures in the foreground add to the visual amenity of this area. Within this matrix there are patches of historic woodland and Wood Park, the park of a Big House (a 'Designed Landscape'). Nearby, Mountshannon is frequently described as an estate village. It was a minor part of the extensive estate of the First Earl of Cork in the early decades of the seventeenth century and a linen industry was developed during the early to mid-eighteenth century. The lough margin may preserve a variety of historic piers or slipways, whilst the lough itself is likely to contain fish traps, crannogs and ritual deposits. Inishcaltra is an important devotional centre and early monastery.

Today, the undulating lowland farmland commonly composed of small fields, are enclosed by dense hedgerows and trees that slope gently towards the loughshore. Hedgebanks are also evident within this area and create a strong landscape element along the narrow roads and lands.

Settlement is sparse along the shoreline, with narrow routes running from the shoreline to the higher slopes. Elsewhere, scattered settlements prevail

throughout the area, comprising individual farm units and cottages, with many traditional two storey and whitewashed buildings present. Killaloe, Scarriff and the villages of Tuamgraney and Mountshannon are located along the elevated lough road, with Killaloe being an important bridging point across the Shannon. A number of small bays, inlets and quaysides are apparent along the lough shore, as well as recreational facilities such as boating, golfing and camping.

Consultees identified the whole of Lough Derg as being of intrinsic value with the sheer scale of the lough considered to be a distinctive and valued feature. In particular, the area south of Tuamgraney and east of Ogonnolloe was identified as being of particularly high landscape value. The distinction between the villages of Mountshannon, Tuamgraney and Killaloe with the surrounding unspoilt open lough countryside was further identified as being of a high value. Mountshannon village was also regarded as a significant element in the landscape for its setting, traditional dwellings and vernacular dormer windows.

Landscape Condition and Sensitivity

Overall, this is a highly scenic area, well maintained and intact. However, increasing development pressures are apparent. The lack of screening contributes to the main degradation of the landscape within this area. In particular, inappropriate housing development (such as chalet style holiday homes) on the Tipperary side of the lough negatively impacts on views across the lough. Along the main lough road, increased ribbon development is evident. The inappropriate siting of houses in visible higher slopes without appropriate screening further intrudes on the natural landscape.

The lough shore would be very sensitive to development, particularly if this results in clearing of the lough shore woodland that is strongly characteristic of this southern part of Lough Derg. Development on the higher slopes without appropriate screening would also be very visible. A certain amount of natural screening is afforded by the hedgerows and hedgebanks within this area, and further small scale development may be absorbed, as long as due care is given to the siting, design and boundary treatments. The cumulative impact of development on the water quality of the lough itself must also play a crucial role in determining development.

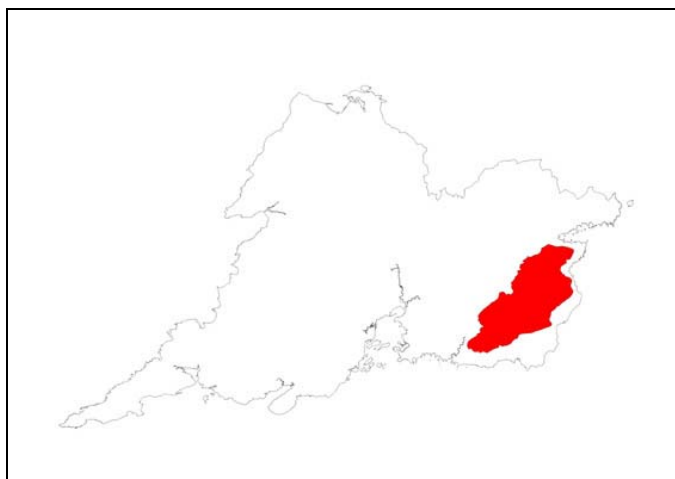
The shoreline of Lough Derg is designated as an area of high amenity in the county development plan.

Forces for Change

-
- Inappropriate housing or tourist development affecting visual characteristics of the lough area
 - Ribbon development along scenic routes, for example, cited of Ogonnolloe where single houses extend for 2km outside speed limit to the north
 - Inappropriate holiday home development, particularly along Tipperary side e.g. chalet style housing
 - Proliferation of loughside facilities such as increasing marina, water-based activities and loss of deciduous woodland to accommodate this
 - Natural and man-made changes to water level and quality due to climate change, agricultural pollution, possibly leading to flooding of shore and inundation of islands
 - Changing farming practices, either through intensification leading to larger field boundaries or abandonment and decline of maintenance of hedgerows and rush invasion of pastures
 - Dereliction of old farmlands and homesteads and replacement with modern, unsympathetic bungalows
 - Insensitive upgrading of roads, affecting landscape character and historic features
-

Principles for Landscape Management

-
- Further housing development should be directed away from the lough shore and within less visible areas, guidance should be available on siting, design and boundary treatment
 - Promote maintenance of hedgerows, hedgerows and trees
 - Promote further uptake of REPS
 - Further expansion of marina and leisure based activities should be very carefully considered and sited in order not to further degrade the highly valued and scenic lough area
 - Monitor water quality carefully as the catchment is very important
 - Manage water based activities on Lough Derg
-



Key Characteristics

- Area of gentle and rolling hills reaching 530m at Sliabh Bernagh.
- Settlement is scattered, confined to lower fringes.
- Hedgerows create a wooded feel and are often planted with fuchsia around dwellings.
- Historically little settlement other than ritual, as evidenced by a number of cairns, barrows and standing stones identified on the eastern slopes. Broadford Gap is an important Bronze Age passing route.
- Remote and isolated with panoramic views afforded to Lough Derg, lower drumlin farmland and Shannon estuary.
- Vegetation dominated by heather moorland with plantation forests and semi-natural deciduous woodland on lower slopes and along water courses.

Typical Photograph: Coniferous Plantations on Sliabh Bernagh



Landscape Character Types, Historic Landscape Types and Habitat Types

LCTs	HLTs	HLT codes	HT's	HT codes
Upland Hills	Enclosed Land 1	EL1	Coniferous plantation	WD4
Upland Fringe	Enclosed Land 2	EL2	Upland blanket bog	PB2
Glacial Valley	Enclosed Land 3	EL3	Wet heath	HH3
	Enclosed Land 4	EL4	Broadleaved woodland	WD1
	Rough Ground 1	RG1	Montane heath	HH4
	Rough Ground 2	RG2	Scrub	WS1
	Rough Ground 3	RG3	Hedgerows	WL1
	Broadleaved Woodland	BL	Improved agricultural grassland	GA1
	Designed Landscape	DL		
	Settlement 1	S1		
	Devotional and Ritual	DR		

Landscape Character Area Extent

Upland hills and slopes around Sliabh Bernagh, extending from lower slopes above Tuamgraney in the north, over to Ogonnelloe in the east, extending to above Cratloe village in the south. This large area encompasses Woodcock Hill, Knockaunnamoughilly, Seefin and Sliabh Bernagh. The Broadford Gap separates the two upland areas of Sliabh Bernagh and the Broadford Hills.

Geology and Landform

This area of rolling upland hills, with broad slopes, is underlain by Old Red Sandstone and Lower Palaeozoic siltstone and shale. The broad slopes occasionally rise to limited narrow ridges and some rocky outcrops are

evident particularly on higher slopes. There are also plateaux areas around these upper slopes.

Glacial processes can be seen, with a significant amount of this area covered very thinly with soil, and bedrock within one metre of the surface. This is combined with shale and sandstone derived till, and peat deposits. Along the Broadford gap (a probable glacial valley) there are deposits of gravel.

Landcover and Ecology

Extensively planted with coniferous plantations in parts, the open upper slopes are largely blanket bog and wet heathy landcover with some turbery evident. Some older plantations are now being clear felled (such as the Congo area) and this accounts for a significant amount of landcover classified as 'transitional woodland/scrub' in the Corrine system. On the lower slopes, there is an increase in pasture and more enclosure generally by hedgerows and hedgebanks along narrow roads. There are pockets of deciduous woodland on the lower slopes and along water courses, and the uplands are dissected by numerous radial streams in incised valleys, with small loughs such as Lough Avulligh. Cratloe woods are an important amenity area of mixed woodlands. There are currently no SAC designations within this area.

Historical & Human Influences

Sliabh Bernagh remains a prominent feature south of Lough Derg with deeply incised corries unfavourable to settlement. Consequently, it is defined as open rough ground and is largely devoid of monuments. Peat working may have had a considerable history. Megalithic tombs occupy the bluffs overlooking the Glenomra River, indicating that there was a prehistoric population living nearby. The valley is filled with the general mixture of fields. It is possible that recent alluvium in the valley has covered earlier landscape features.

The Broadford Hills are mostly rough ground divided by sinuous boundaries. They similarly sweep down to rivers. Where the boundaries of straight-sided fields become irregular represents an indication that megalithic tombs are located nearby. On the southern slopes, between the Mountrice and O'Neills Rivers, is a long thin tongue of land divided with straight boundaries (EL4), which may be determined by the landform. Alternatively, this area overlooks a substantial area of improved farmland by the River Shannon and it may have been reorganised during a period of agricultural re-orientation towards market production. Between the Broadford Hills and Sliabh Bernagh is a strategic valley where Broadford is sited. Glenomra Castle, named after the river that formed the valley, once controlled access through it. The valley has mixed sinuous- and straight-bounded fields common to Clare (EL2) but with significant pockets of consistently straight-edged fields (EL4).

The upper slopes are generally remote. However, several communications masts on the summit of Woodcock Hill interrupt this sense of isolation. These

slopes are rarely enclosed, though post and wire commonly enclose forestry plantations.

Settlement is scattered along the upper perimeter slopes with isolated farmhouses. These include traditional style cottages or two storey dwellings and red corrugated outbuildings, frequently accessed by narrow lanes. Hedgerows create a wooded feel and are often planted with fuchsia around dwellings. Travelling down to the lower slopes, there is an increase in settlements, accompanied by an increase in pasture and hedgerow enclosure, post and wire and small remnants of stone walls. Around the townland of Sallybank, there are several solid two storey farmhouses or cottages. These are increasingly replaced by modern bungalows less reflective of vernacular styles as one descends. There are a considerable number of abandoned and derelict dwellings within this area. Broadford is the only village, providing a number of services to the surrounding areas.

Communications are sparse on the upper slopes, with access around Sliabh Bernagh predominately through forestry roads. The road crossing a busy quarry on the Broadford Hills is extremely busy with quarry trucks. Perimeter roads occur on the other uplands, and are replaced by an increase in narrow roads crossing the lower areas. The Broadford valley remains an important access route, with the R466 linking the village of Broadford with O'Briensbridge (another crossing point on the Shannon).

Consultees identified these upland areas as having a general ecological value through the presence of heather uplands and bogs. The Broadford valley is also regarded as a key landscape element, as are the mines and the regional road itself.

Landscape Condition and Sensitivity

These uplands are isolated, remote and expansive with long views afforded across surrounding landscape to Broadford Hills, Lough Derg and lower drumlin landscapes. The upper parts remain intact due in part to inaccessibility. The lower slopes are sometimes affected by commercial forestry and inappropriate housing styles. However, the extensive hedgerow boundaries, and some fine examples of vernacular housing, ensure that many parts of this LCA remain intact and very attractive.

The higher slopes would be sensitive to very visible development as the several masts at Woodcock Hill illustrate.

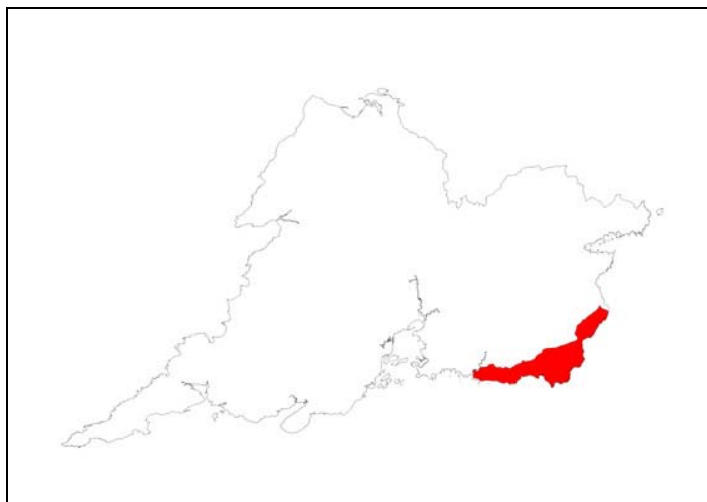
Sliabh Bernagh and Woodcock Hill peats are classified as visually vulnerable or sensitive under the county development plan. The skylines of Sliabh Bernagh and Woodcock Hill to Ballycar are also designated as high amenity under this current plan.

Forces for Change

-
- Visual detractors such as masts and windfarms in prominent high points interrupting the remote character of area
 - Dereliction of farms and stone cottages and their replacement by modern bungalows not reflective of traditional vernacular styles
 - Agricultural change, principally decline with rush infestation and decline of landscape features
 - Impact of access roads for communication masts and forestry on more sensitive moor habitat
 - Dumping of cars and fridges
-

Principles for Landscape Management

-
- Careful consideration must be given to siting and planting regime of new forestry plantations, in small-scale irregular plantations with a good proportion of deciduous tree. Irregular edges following the landform and varied age structure will help prevent creation of large uniform blocks
 - Clear felling regimes need to be carefully managed so not to impact overwhelmingly on the landscape
 - Conserve open character of remaining areas
 - Stronger coordination is required for masts
 - Direct new development to lower slopes reflecting existing pattern of development and using shelter provided from existing vegetation and landform; guidance should be provided on siting, location and style of new houses
 - Encourage restoration of derelict houses
 - Promote REP uptake
 - Promote proactive management of windfarms
-



Key Characteristics

- Lowland farming area with meandering River Shannon providing key focus.
- Small settlements/villages such as Parteen and Cloonlara.
- Agricultural, rural landscape with intact features and well maintained.
- Framed by undulating lowland farmland with Sliabh Bernagh and Broadford Hills in the distance.
- O'Briensbridge is an Architectural Conservation Area (ACA).

Typical Photograph: River Shannon Farmlands



Landscape Character Types, Historic Landscape Types and Habitat Types

LCTs	HLTs	HLT codes	HTs	HT codes
River Valley Farmland	Enclosed Land 1	EL1	Improved Agricultural grassland	GA1
	Enclosed Land 2	EL2	Hedgerows	WL1
	Enclosed Land 3	EL3	Depositing/lowland river	FW2
	Enclosed Land 4	EL4	Oak-birch-holly woodland	WN1
	Rough Ground 2	RG2	Scattered trees and parkland	WD5
	Rough Ground 3	RG3	Marsh	GM1
	Broadleaved Woodland	BL		
	Designed Landscape	DL		
	Settlement 1	S1		
	Settlement 2	S2		
	Estuarine Intertidal	EI		
	Devotional and Ritual	DR		

Landscape Character Area Extent

The River Shannon corridor and lower lands extend south from Killaloe, skirting the lower slopes of Sliabh Bernagh LCA, and concluding further west to where the Owengarney River enters the Shannon estuary.

Geology and Landform

This area is largely underlain by a variety of limestone, with a narrow stretch of Old Red Sandstone where the area extends towards to lower slopes of the Broadford hills. Limestone derived tills predominate, with sandstone derived tills at the northern boundary. However, there are also deposits of estuarine

silts and clays around the meandering stretch of the river towards Limerick. These deposits increase as the river enters the estuary proper along the southern boundary of this area and where the Owengarney river enters the estuary. Several rivers including, Ardcloony, Ballyteige and Black rivers drain into the Shannon, as well as numerous small streams. The meandering river defines this area, which is low lying with gentle undulations.

Landcover and Ecology

Soils are largely gleys reflecting the influence of the river system and are interspersed with brown podzolics, and pockets of peat. Grassland in pasture with silage production is almost completely dominant in this area. Very limited areas of transitional scrub or woodland can be identified, and some small forestry on upper reaches of farmland at slopes of Broadford Hills is also apparent.

This stretch of the river is designated as a Natural Heritage Area (NHA), but a number of SAC designations are contained within this LCA. These include Knockalisheen marsh, an example of unimproved grassland and wetland, with low intensity grazing; Garrannon Wood, a small oakwood; and Glenomra Wood, a semi-natural deciduous woodland. Further ecological interest is provided by the hedgerows and hedgerows, frequently with mature hedgetrees that enclose much of the farmland within this area.

Historical & Human Influences

The farms bordering the Shannon have undergone extensive modernisation in the late eighteenth and early nineteenth centuries and are predominantly irregular fields with straight boundaries (EL4). By the 1830s, Doonass parish was largely in tillage (Lewis 1837). The area was served by the Headrace and other canals from the beginning of the nineteenth century and had good communications with Limerick. Most of the field boundaries date to this period but there is a distinct area of enclosed strip fields surrounded by irregular rough ground north of O'Briensbridge (EL3, RG2 and RG3 in concentric rings) – potentially a site of Rundale agriculture.

Doonass Demesne and Kincora are parklands of big houses, exploiting river views. Megalithic tombs, enclosures and ringforts occupy bluffs overlooking the river, and castles occasionally dominate transport routes, as at Harold's Cross Roads. Downstream of Limerick there are considerable tidal flats (EI). Work by the Discovery Programme has revealed several fish weirs in the vicinity of Bush and Craigue Islands. One may conclude that in former times the tidal creeks and mud flats were a well-utilised resource. They are in a position where extensive urban development, leading to a rise in the peakflow run-off of stormwater, could scour the main channel leading to erosion of the mud banks. Cratloe Woods (BW) are a historic aristocratic resource that furnished the timbers for Westminster Hall in the Middle Ages.

A number of villages such as Parteen, Cloonlara and O'Briensbridge are located here in addition with a more dispersed settlement pattern of single and two storey farmhouses with slated sheds and corrugated barns accessed by a network of roads crisscrossing a number of small lanes.

This area was also considerably impacted by the drainage and canalisation of the River Shannon to provide for hydropower at Ardnacrusha. In addition, a number of farms were divided and submerged, the national school and post office of Parteen were demolished, as they were in the path of the tail-race.

Consultees identified the stone bridges as a key landscape feature, in addition to a wider comment about folk beliefs remaining strong in relation to white thorn bushes in the east Clare area.

Landscape Condition and Sensitivity

This remains a largely rural, agricultural landscape with fields usually enclosed by hedgerows, hedgebanks and trees. This helps create an intimate, well wooded landscape. The meandering Shannon also provides an important landscape feature throughout this area. However, the influence of Limerick is increasingly apparent, particularly in the southern part of this area. This is reflected in increased pressure for housing and expansion of existing settlements. This contrasts with the northern part around Killaloe, which is also subject to similar pressures (though perhaps not to the same degree) that has retained a more rural sense.

Development can be absorbed within areas of natural screening, but the low lying nature of the landscape also means that large scale development is likely to be highly visible unless carefully designed. Moreover, the decline of farming will also have a significant impact due to less management of core agricultural elements in this landscape, notably vernacular buildings and field enclosures.

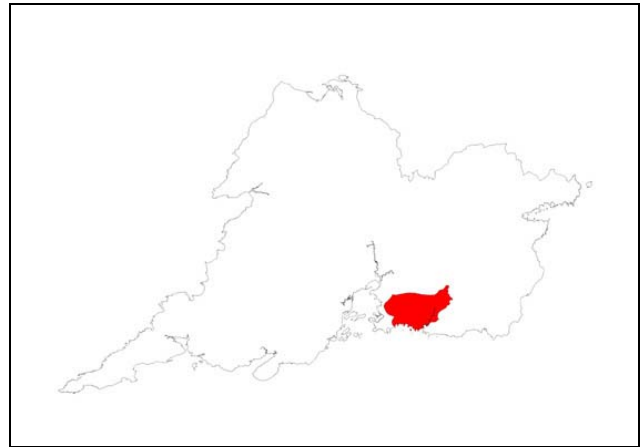
The banks of the River Shannon are designated as high amenity under the county development plan

Forces for Change

-
- Residential pressures evident at Parteen, Ballycannon, O'Briensbridge and Cloonlara, reflecting influence of Limerick
 - Expansion of existing settlements and unsympathetic housing styles
 - Changing agricultural practices in particular decline
 - Road upgrades
 - Declining water quality
 - Consequences of the expansion of the Limerick-Shannon-Ennis area as a regional gateway to the West of Ireland by air for passengers and by both air and sea for freight
 - Regeneration of Shannon town centre
 - Scarring of hills near O'Briensbridge from quarrying activity
-

Principles for Landscape Management

-
- Guidance should be provided on siting, location and style of new houses that reflects vernacular styles
 - Careful consideration is needed regarding the expansion of existing settlements, landscape criteria could be included in design briefs to improve boundary treatment and planting regimes.
 - Encourage uptake of REPs
 - Retent canal banks at Cloonlara
 - Preserve the bridge at O'Briensbridge, a listed protected structure of regional importance
 - Preserve riverside grounds, walks and woodlands at Parteen
 - Provide guidance on any new planting regimes with emphasis on native species indigenous to the area
-



Key Characteristics

- An undulating, well maintained landscape, with the principal river of Owengarney draining from Doon Lough in the north.
- An area of considerable archaeological and historical interest testifying to its strategic location and good land resources.
- Principal roads cross through this area such as the N18 and there is a significant urban and commercial centre at Shannon, as well as the smaller settlement of Sixmilebridge.
- Quin and Sixmilebridge are designated ACA (Architectural Conservation Areas).

Typical Photograph: Farmlands near Sixmilebridge



Landscape Character Types, Historic Landscape Types and Habitat Types

LCITs	HLTs	HLT codes	HTs	HT codes
River Valley Farmland	Enclosed Landscape 2	EL2	Hedgerows	WL1
Urban	Enclosed Landscape 3	EL3	Improved agricultural grassland	GA1
	Enclosed Landscape 4	EL4	Wet grassland	GS4
	Rough Ground 2	RG2	Broadleaved woodland	WD1
	Rough Ground 3	RG3	Scattered trees and parkland	WD5
	Broadleaved Woodland	BL	Stone walls and other stonework	BL1
	Designed Landscape	DL		
	Settlement 1	S1		
	Settlement 2	S2		
	Airport	A		
	Water Bodies 1	WB1		
	Estuarine Intertidal	EI		
	Devotional and Ritual	DR		

Landscape Character Area Extent

South of Newmarket -on- Fergus to Shannon town, east towards Cratloe and north to Ballyculen, including Sixmilebridge and Bunnratty.

Geology and Landform

A variety of limestone series underlie this area, with extensive deposits of limestone till. Limestone outcrops occasionally feature and in the central part of this area, in northeast southwest orientation, bedrock is frequently within

one metre of the surface. Occasional peat deposits are located within this gently undulating landscape. South of the N18 on the estuary side, estuarine silts and clay remain apparent. This area also becomes increasingly flatter and more estuarine in character.

Landcover and Ecology

Soils are dominated by grey brown podzolics, interspersed by podzols and gleys. There are very limited peat deposits and brown earths. The predominant grey brown podzolics are well drained and respond well to management. They have contributed to a highly productive grassland area, combined with tillage in parts and equestrian activities.

Landcover is therefore dominated by grassland with pockets of scrub or transitional woodland. There are also a number of mature specimen trees within the boundaries of estates. Castle Lake, north of Sixmilebridge is an SAC, notable for its open water and a diversity of associated, adjacent habitats including marsh and ash/oak woodland.

Historical & Human Influences

An area of considerable archaeological and historical interest, it also includes Shannon Airport, maintaining the international connections that have typified the Shannon from earliest years.

Most of the area is irregular fields (EL2, with sinuous and straight boundaries). The Owengarney River was crossed by a Mediaeval bridge and the crossing is dominated by Bunratty castle. This was arguably the key stronghold of the county in the high Mediaeval period. Much of the area was planted by settlers in the late Tudor and Jacobean period. The settlers undoubtedly remodelled the landscape according to their contemporary perceptions of an ordered and productive regime. How much of that organisation is evident today is debatable but it is likely that they helped drain the boggy margins of the Owengarney and Shannon. Sixmilebridge is a planned town with associations with the Lever family.

Today, the large, often rectangular and square fields are frequently enclosed by hedgerows or significant stone walls enclosing estates. These hedgerows are generally well maintained. Settlement is dispersed with a considerable number of estate houses. This contrasts with the major urban centre at Shannon and the intact, attractive planned town of Sixmilebridge. A number of regional roads radiate from Sixmilebridge, towards Quin, Shannon and Kilkishen. The N18 also crosses through this area, providing an important communication route for the Limerick-Shannon-Ennis corridor.

Consultees valued this area as being well maintained with good soils and large fields. It was also considered to be a largely intact landscape with relatively low numbers of new houses.

Landscape Condition and Sensitivity

This is a generally well-maintained landscape, with good land and intact hedgerows. Further landscape variety is provided by the solid stone walls of estates, with large houses and small areas of demesne or parkland. This area maintains a prosperous rural sense away from the principal routes.

However, current road improvement schemes that appear to have a high landtake detract somewhat from this area. The southern part of this LCA contrasts with the area north of the N18 and is considerably influenced by the estuary, with accompanying low lying, flatter areas with very limited settlement.

The agricultural land around Sixmilebridge is classified as visually vulnerable and sensitive under the county development plan.

Forces for Change

-
- Expansion of settlements (Sixmilebridge and Quin) and influence of urban areas such as Shannon and Limerick
 - Road improvements with significant landtake
 - Agricultural expansion/decline
 - Boundary treatments and dereliction of older houses and walls
 - Scarring of hills close to Bunratty
 - Pressures for increased tourism-related facilities in Bunratty
-

Principles for Landscape Management

-
- The integrity of the rural landscape should be maintained through sensitive planning and design
 - Infrastructural developments including road widening should consider local landscape character and reflect local boundary treatments
 - Advice for new developments should include design, siting and boundary treatments
 - Core agricultural features including hedgerows and stone walls should be maintained
 - Contain urban areas
 - Encourage uptake of REPS
-



Key Characteristic

- The landscape is an attractive mosaic of loughs, farmlands and occasional limestone outcrops reflected in the presence of stone walls.
- The area is predominately rural in character dissected by quiet minor roads, increasingly busy towards Sixmilebridge and Limerick.
- Settlement is traditional and scattered across the area in the form of single and two storey isolated dwellings, punctuated by small nucleated settlements such as Bodyke and Kilkishen.
- An intact rural feel, declining towards the southern end; views are frequently limited due to drumlins, strong presence in the landscape.

Typical Photograph: Lough Callanaheeda



Landscape Character Types, Historic Landscape Types and Habitat Types

LCTs	HLTs	HLT codes	HTs	HT
Drumlin Farmland with Loughs	Enclosed Land 1	EL1	Hedgerows	WL1
	Enclosed Land 2	EL2	Treelines	WL2
	Enclosed Land 3	EL3	Conifer plantation	WD4
	Enclosed Land 4	EL4	Improved agricultural grassland	GA1
	Rough Ground 2	RG2	Broadleaved woodland	WD1
	Rough Ground 3	RG3	Lakes and ponds	FL
	Broadleaved Woodland	BL	Wet willow/alder/ash woodland	WN6
	Designed Landscape	DL	Wet grassland	GS4
	Settlement 1	S1	Scrub	WS1
	Recreational	R	Marsh	GM1
	Water Bodies 1	WB1	Rich fens and flush	PF1
	Settlement 2	S2		
	Devotional and Ritual	DR		

Landscape Character Area Extent

An extensive area extending from the outskirts of Scarriff in the north, fringing the Sliabh Bernagh and Broadford Hills to Newmarket -on- Fergus in the west and skirting the outskirts of Quin in the east.

Geology and Landform

This area is underlain predominately by a variety of limestone series, with a central belt of Namurian shales. There are a high number of faults within this area, reflecting extensive geological activity. North-east to south-west

oriented drumlins with numerous loughs reflect the drumlin orientation and are connected by the Derryruane, Ahaclare and Cloghare rivers. There are areas of exposed limestone, or where the bedrock is within one metre of the surface. The belts of loughs are frequently accompanied by peat deposits, reflecting peat formation activity around these loughs since the last ice age. The majority of the area is overlain by limestone derived till.

Landcover and Ecology

Landcover is dominated by pasture grassland, with pockets of broadleaf forest and small coniferous plantations adjacent to peat areas and loughs. The inter-drumlin hollows contain numerous loughs of varying sizes, frequently surrounded by wetland fringe, with scrub of willow and wetloving species.

The high ecological value of this area provided by the loughs, lough fringes and peat areas are evidenced by the considerable number of SAC designations. These include Ballycar Lough, a calcareous lake with important fen vegetation; Doon Lough, a large freshwater lake, Lough Cullanyheeda with significant waterfowl populations. Due to the extensive limestone and drainage system within this area, there are also two cave systems designated as SACs, Danes Hole at Poulnalecka and Poulmagorden, south of Quin. Both caves support populations of Lesser Horseshoe Bats.

Historical & Human Influences

The East Clare Loughlands are a patchwork of irregular fields with smaller areas of rough ground and some small areas of forestry. This landscape area shares much of the history of the Sixmilebridge farmland). The loughs have crannogs, which may have been used from the Bronze Age to the Early Modern period, and are likely to have ritual deposits and fish traps etc.

There are significant parklands at Carrigoran and Mooghaun. Incorporated into these, as a type of folly or ruin, was the late Bronze Age Hillfort of Mooghaun. This was a considerable centre of population in the second millennium BC and was the hub of a network of forts and defended farms, in a landscape dotted with standing stones and fulachta fiadh. Many of these features are visible to this day and have helped form some of the fabric of the rural environment.

Hedgerows and hedgerow trees enclose fields throughout the area. These are generally quite thick, and sometimes with the hedgetrees create green tunnels as one traverses the network of narrow roads crisscrossing the area, and weaving around and over drumlins. Limestone walls, often quite blocky, are apparent where the bedrock is close to or exposed to the surface.

Settlement is traditional and scattered across the area in the form of single and two storey isolated dwellings, with corrugated outbuildings. Montbrechia (*Crocsmia x crocosmiflora*) is commonly planted close to dwellings. This dispersed settlement is punctuated by small nucleated settlements such as

Bodyke and Kilkishen. The area also contains a number of estates as evidenced by estate walls, avenues and mature specimen trees, for example at Kilkishen demesne.

Tourist facilities, picnic areas etc, are found at a small number of loughs, such as Doon Lough, however many others have no facilities, enhancing the natural character of these features.

Consultees identified Clonlea Lough and Lough Cullanyheeda as being of particular value, with the latter containing a limestone area and raised bogs. Mountcashel Lough, a source of potable water for the Shannon area was considered significant also. Finnlough was further identified as an important site for holy and blessed wells. These holy wells are considered curative for sore eyes and there is still a pattern day for this well, on 27 April.

Landscape Condition and Sensitivity

A very attractive and generally well-maintained rural landscape. The hedgerows and trees, with limited hazel scrub on limestone areas, create the impression of a well-wooded landscape. Combined with the numerous low drumlins, loughs and fringe vegetation, an intimate landscape is created. Views to loughs are often limited by woody loughland fringe though longer views across drumlin areas are afforded from higher drumlin slopes. This often results in limited views and access to the loughs and preserves the intimate quality and ecological value of these waterbodies.

This area can accommodate small-scale development though the restoration of old properties is preferable to construction of new ones. The area would be sensitive to large scale and unsympathetic development that would affect the condition of the loughs and associated habitats. This would also include coniferous planting that does not reflect the drumlin landform.

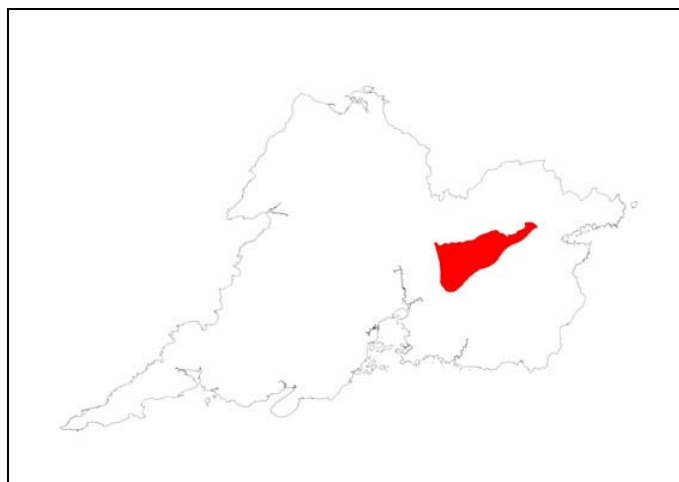
A number of the lough shores in this area are classified as high amenity under the county development plan. In addition, habitats around Fin and Rosroe loughs are designated as visually vulnerable and sensitive under the same plan.

Forces for Change

-
- Changes in farming practices, intensification or abandonment
 - Use of chemicals, silty run off affecting water bodies
 - Loss of traditional components of the landscape – stone walls, hedgerows, hazel scrub
 - Inappropriate modern development and dereliction of older properties
 - Road development and improvements not sensitive to the surrounding landscape
 - Inappropriate tourism development on loughs
 - Archaeology around Doon Lough under pressure from illegal searches using metal detectors
 - Kilkishen castle urgently requiring restoration
 - Potential for residential development in Newmarket-on-Fergus
-

Principles for Landscape Management

-
- The integrity of the rural landscape should be maintained through sensitive planning and design
 - Infrastructural developments, including road widening, should consider local landscape character and reflect local boundary treatments
 - Advice for new developments should include design, siting and boundary treatments
 - Core agricultural features including hedgerows and stone walls should be maintained
 - Water quality of loughs should be monitored and any loughshore development such as recreational facilities should be carefully designed to limit visual impact
 - Encourage uptake of REP
-



Key Characteristics

- Low drumlin area, farmed green hills and hedgerows.
- Small occasional scattered loughs.
- Network of small roads lined with hedges.
- Attractive area, rural low lying and enclosed.
- Limited views due to drumlins and hedgerows.
- Montbrechia (*Crocsmia x crocosmiflora*) found along road verges.

Typical Photograph: Tulla Hinterland Farmland



Landscape Character Types, Historic Landscape Types and Habitat Types

LCTs	HLTs	HLT codes	HTs	HT codes
Low Drumlin Farmland	Enclosed Land 2	EL2	Hedgerows	WL1
	Enclosed Land 3	EL3	Improved agricultural grassland	GA1
	Enclosed Land 4	EL4	Lakes and ponds	FL
	Rough Ground 2	RG2	Raised bog	PB1
	Rough Ground 3	RG3		
	Broadleaved Woodland	BL		
	Designed Landscape	DL		
	Settlement 1	S1		
	Water Bodies 1	WB1		
	Devotional and Ritual	DR		

Landscape Character Area Extent

An extensive low drumlin area extending east from Clooney towards Feakle and including the town of Tulla. The southern boundary transforms gradually into Kilkishen loughlands area.

Geology and Landform

In common with the other east Clare drumlin areas, this LCA is underlain by a variety of limestones. Limestone derived glacial till is predominant, though as the area extends towards the Sliabh Aughty and Lough Graney LCAs, there is an increase in sandstone derived till and peat deposits. There are very occasional patches of exposed limestone within this area.

The low drumlins orientated in the direction of ice flow remain a key feature of this landscape area. Small loughs are located in the inter drumlin hollows such as Clondorney and Rosslara and a number of streams weave around the drumlins.

Landcover and Ecology

A diversity of soil types is found within this area, reflecting the mixed glacial deposits. Gleys, podzols and complexes are all found in fairly equal amounts and distribution, with occasional brown earths and peats.

Grassland is the principal land cover with pockets of raised bog, and small plantings of coniferous forestry. Land use is mostly pasture farmland, with improved fields and some evidence of rush infestation. This area gradually transforms into loughlands in the east, marked by an increase of limestone walls. There are a small number of SAC designations, including two raised bogs, north east of Tulla, Loughanilloon Bog and Ayle Lower Bog. In addition, the ruins of Newgrove House, again close to Tulla, support a hibernating site of Lesser Horseshoe Bats (*Rhinolophus hipposideros*).

Historical & Human Influences

Between Tulla and Feakle there is a broad belt of discontinuous rough ground surrounded by irregular fields with straight boundaries and with some parkland surrounding the castle at Ballynahinch. The area has been a patchwork of market-oriented small farms for a long time with access to rail at Ennis. The fields have been enlarged within living memory (Pat Nugent pers. comm.) There is a distinct grouping of ritual monuments, standing stones etc, within 800m of Magh Adair, the coronation site for Thomond's kings. This might be considered as a discrete ritual landscape in its own right.

Fields within this area are commonly enclosed by hedgerows and hedgebanks. These hedgetrees can sometimes create attractive green tunnels on the narrow roads.

Settlement is a mix of traditional two and single storey dwellings and more modern properties. There are a significant number of abandoned farm dwellings in this area. The town of Tulla provides a number of services to the surrounding area and is the main nucleated settlement within this LCA. Communications are provided by the principal Tulla-Ennis road and the whole area is criss-crossed by a network of narrow roads weaving between and over drumlins.

Consultees valued the cultural activities within this area, specifically traditional music and GAA sports. The numerous holy wells within this area were also valued, with specific mention made of St Senan's, St Joseph's and St Bridget's. The caves, known as Tromeen caves, near Tulla were further identified as being of landscape value, and the views over the drumlin areas

from the graveyard at Tulla were also of value. Magh Adair was also considered to be of significant value by consultees.

Landscape Condition and Sensitivity to Change

Away from the main road, this area is generally in good condition and is intact with a strong rural sense. However, there is evidence of agricultural decline with rush infestation and also abandoned older dwellings and sheds. Along the main road and towards Ennis and Spancilhill, linear ribbon development is increasingly apparent. This development tends to radiate along the roads immediately off the main road as evidenced by the number of new dwellings. The current upgrading of the main road through widening is leading to the replacement of hedgerows by fencing and increases urban sense along this road.

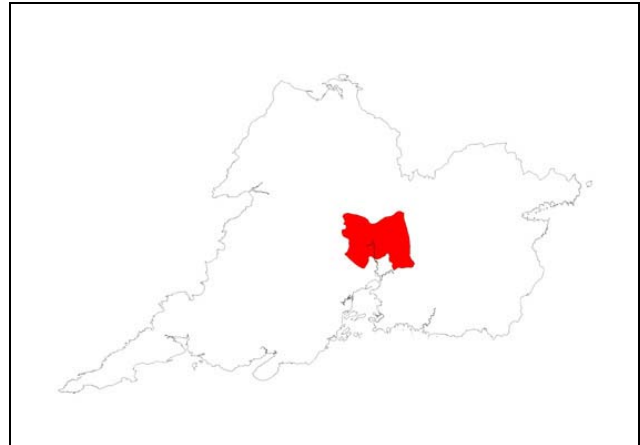
Hedgerows provide good screening and low drumlins can accommodate further development providing they are well sited and designed, locating sites on top of drumlins increases visibility considerably and large scale development would be highly visible within the low drumlin areas.

Forces for Change

-
- Agricultural changes, particularly declining agricultural activity
 - Unsympathetic residential development
 - Road widening and loss of traditional boundary treatments
 - Degradation of remaining estate landscapes, trees, estate walls; woodland management and hedgerow management
 - Detrimental linear development from Tulla centre along slopes
 - Destruction of vernacular cottages along Tulla road
-

Principles for Landscape Management

-
- The integrity of the rural landscape should be maintained through sensitive planning and design
 - Infrastructural developments including road widening should consider local landscape character and reflect local boundary treatments
 - Advice for new developments should include design, siting and boundary treatments
 - Core agricultural features including hedgerows and stone walls should be maintained
 - Encourage uptake of REPS
-



Key Characteristics

- Settlement of Ennis is the focal point of the area where both historical and modern development is apparent.
- Ennis situated within drumlin farmland, drumlins oriented northeast to southwest punctuated by small loughs.
- Area can be disorientating due to many small winding roads and limited views.
- Communication centre for the region with Ennis as county town, with Fergus River running through the town.

Typical Photograph: Farmlands near Ennis



Landscape Character Types, Historic Landscape Types and Habitat Types

LCTs	HLTs	HLT codes	HTs	HT codes
Low drumlin farmland	Enclosed Land 1	EL1	Hedgerows	WL1
Urban	Enclosed Land 2	EL2	Improved agricultural grassland	GA1
	Enclosed Land 3	EL3	Treelines	WL2
	Enclosed Land 4	EL4	Immature woodland	WS2
	Rough Ground 2	RG2	Lakes and ponds	FL
	Rough Ground 3	RG3	Wet grassland	GS4
	Broadleaved Woodland	BL	Scrub	WS1
	Extractive Industry Quarry	EIQ	(Mixed) broadleaved woodland	WD1
	Designed Landscape	DL		
	Settlement 1	S1		
	Settlement 2	S2		
	Recreational	R		
	Water Bodies 1	WB1		
	Estuarine Intertidal	EI		
	Devotional and Ritual	DR		

Landscape Character Area Extent

Radiating from Ennis centre, this drumlin land surrounds the east and west of the county town, encompassing Quin in the east and Kilnamona to the west.

Geology and Landform

This drumlin area is underlain by a series of limestones, with a central strip of Namurian shales. The area is almost entirely overlain with limestone derived

till deposits, with some estuarine silts and clays adjoining the Fergus as it travels south and widens. There remain pockets of exposed limestone bedrock or where the bedrock is within one metre of the surface.

This area is composed of numerous drumlins oriented in the direction of the ice flow, with the River Fergus almost dividing the area into two equal parts.

Land Cover and Ecology

A diversity of soil types is found within this area, reflecting the mixed glacial deposits. Gleys, podzols and complexes are all found in fairly equal amounts and there are also pockets of rendzina soils.

Although Ennis amounts for a significant amount of land cover with urban settlement, the surrounding areas remain as predominately grassland. There are also a number of broadleaf forests, especially to the west and south-west of Ennis. Transitional woodland and scrub is also evident in small areas, though this is likely to be recent planting of commercial forestry. One of these pockets of deciduous woodland, Cahercalla Wood, southwest of Ennis is designated as an SAC and is a good example of native woodland on limestone. Ballyallia Lough is an SPA with significant numbers of Whooper Swans and as a naturally eutrophic lake is an Annex I habitat. A smaller linked lough east of Ballyallia is also designated. Other SAC sites relate to old buildings and limestone caves, which provide a variety of functions for bat populations within the areas.

Historical & Human Influences

The town has been a focus of settlement since the middle ages. Augustinians arrived at Clare Abbey (two miles south of the town) in the twelfth century and Franciscans were settled in the town since the thirteenth century. There was an extended grouping of castles and estates of local magnates who felt it useful to live within proximity to a senior O'Brien lord (under whose protection the town lay). It became a borough in 1612. Ritual, recreational and designed landscapes are found in close proximity to the town centre. The town had significant market functions and the farms surrounding it are within an easy day journey. The low land near the Fergus was favoured for feudal estates and was subsequently divided into irregular straight-sided fields (EL4) whilst the Drumlin belt divided into irregular fields (EL2) and rough ground (RG2 and RG3), partially determined by the landform. Ballyallia Lough contains a notable crannog. Quin Abbey is another important historical feature that still dominates the landscape in and around Quin village.

The landscape becomes increasingly rural the further one travels from Ennis. Fields are enclosed by hedgerows with hedgetrees, though some are quite gappy. Post and wire fencing often enclose fields along the main roads. Settlement is dispersed though it concentrates along the busy main roads that radiate to and from the county town. Many of these linear developments are strongly urban in style and quite visible. At Lough Ballyallia, there is some

recreational development including golf courses and picnic areas. Access to the parking area is currently restricted by the presence of boulders. There is a very large quarry for limestone north of Ennis.

Consultees identified a number of features within this area, including the limestone outcrops, hidden pockets of shale, the caves near Quin (which allegedly connect to Quin Abbey) and fairy trees.

Landscape Condition and Sensitivity

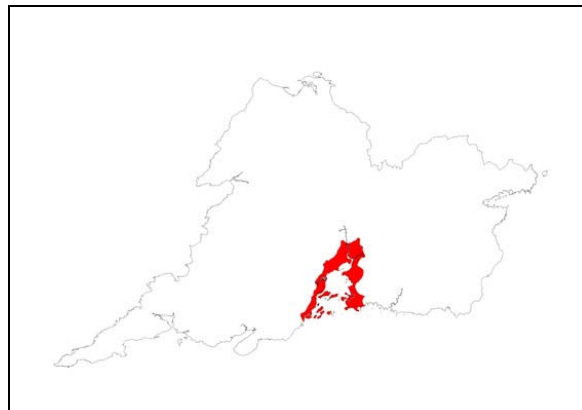
The condition of this area is variable, poor development has degraded landscape quality in some areas through highly visible quarries, golf courses, and road upgrades. Linear development along the main roads and on the small roads near to Ennis reflect the housing pressures within this area, but their urban design frequently detracts from the landscape. Large pylons are also visible along the skyline north of Ennis. Nonetheless, the more remote drumlin hinterland, away from the main roads, remains quite rural and intact. The banks of the Fergus are designated as a feature of high amenity under the county development plan.

Forces For Change

-
- Residential pressure in Ennis
 - Growing development pressure, in particular eastwards to Tulla from Ennis and the Ennis bypass
 - Pressure from increased road construction and loss of hedgerows and land within the Ennis area
 - Potential impact of the bypassing of Ennis and opening up large surrounding areas for development
 - Removal of coppiced woodland
 - Pressure from intensification of quarry activities
 - Under-utilisation of Ennis to Limerick rail
 - Agricultural decline or intensification
 - Consequence of the expansion of the Limerick-Shannon-Ennis area as a regional gateway to the West of Ireland by air for passengers and by both air and sea for freight
-

Principles for Landscape Management

-
- Linear urban development should be avoided and all other development should be screened appropriately
 - Expansion of existing settlements, most notably Ennis, should take due care of local landscape features and integrate these into design briefs for developers
 - The integrity of the rural landscape should be maintained through sensitive planning and design
 - Infrastructural developments, including road widening, should consider local landscape character and reflect local boundary treatments
 - Advice for new developments should include design, siting and boundary treatments
 - Core agricultural features including hedgerows and stone walls should be maintained
 - Quarries should be reinstated and screened appropriately
 - Encourage uptake of REPS
-



Key Characteristics

- Flat estuarine farmland divided by drainage ditches, post and wire fences and degraded thorny hedgerows.
- Open expansive views are afforded across the estuary to the River Shannon, though these are limited in places due to flood defence embankments.
- Settlement is sparse reflecting the areas past tendency to flood, some settlement on higher ground. On eastern boundary, increased settlement due to proximity to Shannon Airport and town.
- Scattered holy wells with a number of graveyards and standing stones.
- Newmarket -on -Fergus and Killadysert are both designated ACA (Architectural Conservation Area).

Typical Photograph: Fergus Estuary



Landscape Character Types, Historic Landscape Types and Habitat Types

LCTs	HLTs	HLT codes	HT's	HT codes
Flat Estuary Farmlands	Enclosed Land 2	EL2	Estuaries	MW4
	Enclosed Land 3	EL3	Hedgerows	WL1
	Enclosed Land 4	EL4	Treelines	WL2
	Rough Ground 2	RG 2	Mud shores	LS4
	Rough Ground 3	RG3	Wet-alder-ash woodland	WN6
	Designed Landscape	DL		
	Settlement	S2		
	Airport	A		
	Recreational	R		
	Estuarine Intertidal	EI		
Devotional and Ritual	DR			

Landscape Character Area Extent

Fergus estuary and estuarine land extending from Clarecastle in the north, along the estuary on both sides, towards Shannon in the east and Killadysert in the west.

Geology and Landform

This low lying distinctive estuarine landscape is underlain almost exclusively by a combination of limestone series. There are small areas on the western stretch that share the extensive Namurian sandstone and shale with the wider west Clare area. Limestone derived till deposits are found towards the boundaries of this LCA and along the eastern shores of the estuary itself. The other predominant surface geology is composed of estuarine silts and clays.

The low lying area is dominated by the Fergus River and its opening into a wide estuary with a number of islands.

Land Cover and Ecology

Soils are predominately gleys, reflecting the history of water logging and flooding within this area. There are also pockets of more productive grey brown podzolics. Land use is largely pasture farmland with equestrian activities evident on the eastern side. Land cover is consequently grassland with very little woodland apparent. However the estuary contains important habitats including reed beds, swamps, salt marsh and wet marsh. This area is of great importance for wintering and migrating wildfowl and contains a number of rare botanical species. This area is designated as an SPA and SAC. A second unusual habitat occurs at Lough Gash turlough, just south-west of Newmarket-on-Fergus. As it tends to drain very late in the year, compared to other turloughs, it consequently supports a number of unusual flora including Red Data book species such as Northern Yellow-Cress (*Rorippa islandica*). Two other SAC sites within this LCA relate to habitats for the Lesser Horseshoe Bat (*Rhinolophus hipposideros*).

Historical & Human Influences

The Fergus estuary is improved, drained, market-oriented farmland. It has been planted with settlers from the late sixteenth century, amongst whom were Dutch émigrés from religious persecution in the Holy Roman Empire. Settlement has grown around Clarecastle, a defended river crossing. The wide estuarine muds are a particular feature, sensitive to increased urbanisation upstream or improved drainage locally (which tends to speed runoff and thereby scour erosion). The muds are the location for a range of monuments, fish weirs and traps, abandoned boats etc, as well as a sedimentary record of events in the surrounds. The islands at the mouth of the Estuary are a particular set of historic landscapes providing both defence of vital transport routes, refuge for religious contemplation and opportunities to exploit the rich sources of food in the estuary. Old slips and piers also form an integral part of the human landscape constituting important passage points in history.

Today, large rectangular fields are frequently enclosed by ditches, and post and wire fencing with limited gappy thorny hedgerows and occasional trees. Increasing hedgerows are apparent on the eastern side of the estuary. Small narrow roads are often built up on causeways, and isolated farmhouses are built on higher elevations reflecting historical flooding problems. Settlement is very sparse, particularly on the western side, with farmhouses built on elevated sites to avoid flooding. The eastern side of estuary is more densely settled due to its proximity to Shannon and Limerick. Clarecastle, Newmarket-on-Fergus and Killadysert are towns and villages within this estuary area.

Consultees identified the mudflats of the estuary and swallow holes of the Fergus as being of value. The high numbers of mature Beech trees around

Newmarket- on- Fergus were also considered to be an important landscape feature.

Landscape Condition and Sensitivity

This landscape is generally of variable condition. The degradation of hedgerows and low quality barbed wire and post and wire fencing gives the hinterland a slightly degraded quality. Increased residential development on the eastern side can be highly visible and newer houses are not always appropriate to this estuarine setting. The settlement of Clarecastle is subject to very heavy traffic and recent fringe developments frequently detract from the historic character of the town. On the western side of the estuary, it is generally undeveloped with a strong remote sense. This is punctuated by the villages of Killadysert and Ballynacally.

Due to the low lying and flat nature of the landscape, tall or large development is highly visible; this also applies to development on the Limerick and Kerry sides. Development on the estuary shore would be highly visible and should be carefully managed as the lack of natural vegetation and topography affords little natural screening.

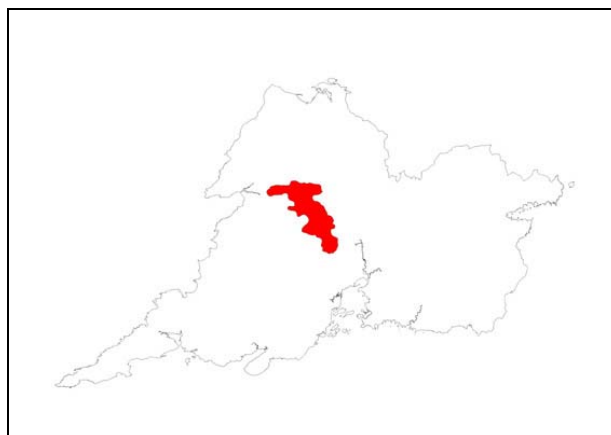
The intertidal flats north of Drumquin, the estuary and north and south of Ballynacally are classified as visually vulnerable and sensitive in the county development plan.

Forces for Change

-
- Modern unsympathetic development
 - Tidal inundation and flooding due to climate change and sea level rise
 - Further degradation of hedgerows and choking of drainage ditches
 - Changes in field patterns due to intensification of agriculture, or conversely, the abandonment of agriculture
 - Road upgrades
 - Construction of natural gas pipeline (though this is temporary)
 - Pollution of estuarine water due to waste water from towns, run off from agriculture etc
 - Shannon Free Zone and unsympathetic development highly visible.
-

Principles for Landscape Management

-
- Careful consideration should be given to new developments along the estuary shoreline due to exposed nature and probability of development being highly visible
 - Careful monitoring of industrial effluent and waste disposal activities are required to control any discharges to the sensitive estuarine habitat
 - Co-ordination of planning for the Fergus and wider Shannon estuary would ensure better management of land use activities in the Counties of Clare, Limerick and Kerry
 - Consideration should be give to the marketing of Newmarket -on -Fergus as a museum town. The first co-operative in Ireland was located here, and there is a long history of the O'Briens, Moughan Mill and the Old Coach Road.
 - Settlement plans should seek to ensure conservation and enhancement of the existing character and quality of settlement, particularly in Killadysert, and retain the local centre within walking distance of residential development
-



Key Characteristics

- High drumlins with mosaic of land uses, including improved and rushy farmland, wetland, lough and forest.
- Coniferous shelter belts are present across the area, reflecting the area's windy exposed characteristics.
- Dissected with narrow windy roads, lined with hedgebanks and hedges.
- Settlement is scattered with areas closest to Ennis revealing increased housing development.
- This landscape can be disorientating as views are only available from higher drumlin tops and roads are typically twisting.

Typical Photograph: Drumlin Farmlands



Landscape Character Types, Historic Landscape Types and Habitat Types

LCTs	HLTs	HLT codes	HT's	HT Codes
High Drumlin Farmland	Enclosed Land 1	EL1	Improved agricultural grassland	GA1
	Enclosed Land 2	EL2	Coniferous plantation	WD4
	Enclosed Land 3	EL3	Hedgerows	WL1
	Enclosed Land 4	EL4	Lowland blanket bog	PB3
	Rough Ground 2	RG2	Wet grassland	GS4
	Rough Ground 3	RG3	Lakes and ponds	FL
	Broadleaved Woodland	BL		
	Designed Landscape	DL		
	Water Bodies 1	WB1		
	Devotional and Ritual	DR		

Landscape Character Area Extent

A high drumlin area bounded by Kilfenora farmlands and Lickeen and Inchiquin Loughs to the north, towards Ennistymon in the west and Magowna townland, south of Kilnamona.

Geology and Landform

This LCA is completely underlain by Namurian shale with till derived from this bedrock predominating. There are peat deposits and occasional pockets where the bedrock is within one metre of the surface. This area is dominated by high drumlins.

Land Cover and Ecology

Gleys are the most extensive soil type within this area, with their weak structure and water logging they are often regarded as poor soils. They have however the potential to become productive pasture if managed appropriately. This has happened within this area, though there is also increasing coniferous afforestation. There are a number of boggy areas in the hollows of drumlins and these are quite extensive within this area. Vegetation and deciduous tree cover increases on lower slopes, with coniferous shelter belts apparent, particularly on the more exposed upper slopes. There are currently no nature designations within this LCA, although the hedgerows and hedgebanks are of ecological significance for a number of species.

Historical & Human Influences

Predominantly irregular fields with both sinuous and straight boundaries (EL2) parcel the land from Ennistymon towards Ennis, dotted with individual family farms. The main route from Ennis to the coast has ensured good access to markets for the local produce, and the north of the area has a concentration of castles or tower houses. A line of holy wells line the small road running south from Dysert O’Dea, which was an important devotional centre and may be thought to form a particular devotional historic landscape.

Narrow windy roads, lined with hedgebanks and hedges, dissect this area. Settlement is scattered with areas closest to Ennis revealing increased recent development, often on drumlin tops. Elsewhere, older two storey farmhouses are evident, and many houses are currently painted in whitewash or pale colours. This can be a confusing landscape as views are only available from higher drumlin tops and roads are typically twisting.

Landscape Condition and Sensitivity

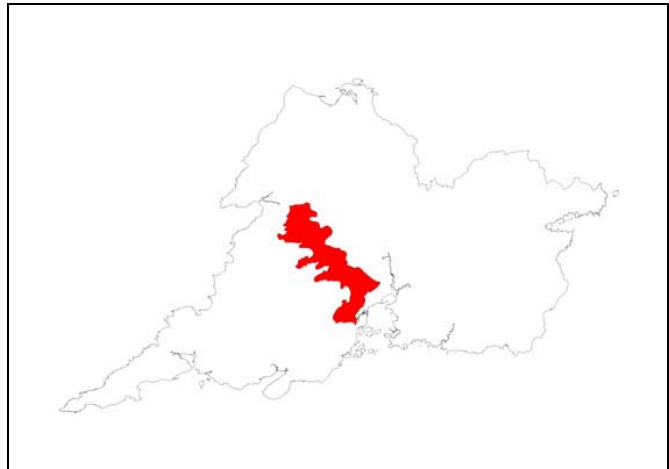
The condition of this landscape is moderate to good. Unsympathetic afforestation has degraded some areas, in addition to some recent visible residential development on drumlin tops. The pylons visible across the upper drumlin domes interrupt the rural character of this area. There is evidence of agricultural decline with rush and scrub infestation in fields. Nonetheless, due to the variations in topography, these areas can accommodate some development. Large-scale development would impact on the existing mosaic of land uses and would be highly visible.

Forces for Change

-
- Unsympathetic modern development radiating from urban centres such as Ennis
 - Masts and windfarms as potential pressures on higher areas
 - Afforestation masking landform and historical remains
 - Agricultural decline and degradation of agricultural landscape
 - Pressures from the N85 through Kilnamona
-

Principles for Landscape Management

-
- New development within lower slopes of drumlin and screened by planting of native species
 - Advice and guidance should be made available on design, siting and boundary treatments that reflect local landscape character
 - Careful consideration needs to be given to siting and planting regime of new forestry plantations, in small-scale irregular plantations with a good proportion of deciduous trees. Irregular edges, following the landform and varied age structure, will help prevent the creation of large uniform blocks
 - Encourage uptake of REPS
 - Infrastructure should take least invasive route option
-



Key Characteristics

- Drumlin farmlands drained by Cullenagh river catchment by a series of small loughs.
- Buckthorn, more deciduous trees and more woody vegetation present with thick hedgerows in parts.
- Drumlins orientated east-west.
- Attractive intimate area with rural intact feel.
- Main settlement at Inagh at crossroads, otherwise scattered.

Typical Photograph: Cullenagh River Farmlands.



Landscape Character Types, Historic Landscape Types and Habitat Types

LCTs	HLTs	HLT codes	HTs	HT codes
Low Drumlin Farmland	Enclosed Land 1	EL1	Improved agricultural grassland	GA1
	Enclosed Land 2	EL2	Depositing low/land rivers	FW2
	Enclosed Land 3	EL3	Treelines	WL1
	Enclosed Land 4	EL4	Scrub	WS1
	Rough Ground 1	RG1	Wet grassland	GS4
	Rough Ground 2	RG2	Dry calcareous and neutral grassland	GS1
	Rough Ground 3	RG3	Hedgerows	WL1
	Broadleaved Woodland	BL	Lakes and ponds	FL
	Designed Landscape	DL	Riparian woodland	WN5
	Water Bodies 1	WB1		
	Devotional and Ritual	DR		

Landscape Character Area Extent

This area is influenced by the Cullenagh river valley and drumlin farmland, and is framed by Sliabh Callan to the south, Kilnamona High Drumlin land to the north and eastwards beyond Kilmaley.

Geology and Landform

In common with most of west Clare, this LCA is underlain by Namurian sandstone and shale. Sandstone and shale derived till overlies much of the area, though it is frequently interspersed with deposits of peat in the lower areas and small pockets of exposed bedrock or bedrock within one metre of the surface. This area is dominated by the river valley of Cullenagh and

associated loughs that weave around the low drumlins that are oriented east-west.

Land Cover and Ecology

Gleys are the predominant soil type, though peats are also apparent. There are also pockets of brown earths and a belt of brown podzolics in the southern part of this LCA.

Grassland is the most common land cover. There are, however, a number of pockets of natural grassland, commonly fringing loughs. This is interspersed with quite extensive bog and wetland areas, likely to be raised bog in inter drumlin hollows and close to loughs. The introduction of small blocks of coniferous plantation has taken place, once again close to loughs and adjacent to wetter peaty areas.

Compared to Kilnamona LCA, this area contains a higher amount of woody vegetation, with deciduous trees and thick hedgerows in parts helping to create an intimate and well-wooded landscape. The numerous small loughs are frequently fringed by deciduous lough shore vegetation, providing further ecological interest. The river Cullenagh also supports strips of riparian vegetation, which is often quite mature and this is an important habitat corridor. Currently there are no SAC designations within this area.

Historical & Human Influences

The Cullenagh farmlands contain the same type of landscape features as the those found in Kilnamona High Drumlin LCA, with the possible exception of Ballyvaneen which has the long rectangular fields (EL3), potentially an indicator of land enclosed from previous common fields. The small loughs that dot the area have the potential for remains such as crannogs. There is a distinct group of historic churches and holy wells south of Kilmaley. The graveyard and well that lie on the Drumlin of Muckinish make a particular devotional complex west of Inagh.

Settlement is rural in nature with farmsteads composed of double and single storey dwellings with corrugated outbuildings. Fields are commonly enclosed by hedgerows with hedgetrees. The main settlements of Inagh and Kilmalley are located at a crossroads junction. Communications are provided by the N85 and a number of regional roads. These roads are augmented by a network of narrow winding lanes crisscrossing the area through the river valley and low drumlins.

Consultees commented that the evidence of former volcanic activity at Cullenagh Lough was a distinctive landscape feature.

Landscape Condition and Sensitivity

This is a generally intact, rural landscape that has few detractors. The low drumlins, streams, loughs and river valley combined with hedgerows help create a diverse and well-wooded landscape. Development can be better accommodated in the lower drumlin slopes, maximising the natural screening afforded by hedgerows. The upper drumlin slopes would be sensitive to development and would be visible to the surrounding area. Lough shorelines would also be vulnerable to lough shore development in terms of visibility and the accompanying clearing of lough fringe vegetation and possible drainage of wet lands. Large blocks of afforestation would also have a negative impact on the variety of landscape types within this area, and care should be taken not to mask the landform and landscape elements.

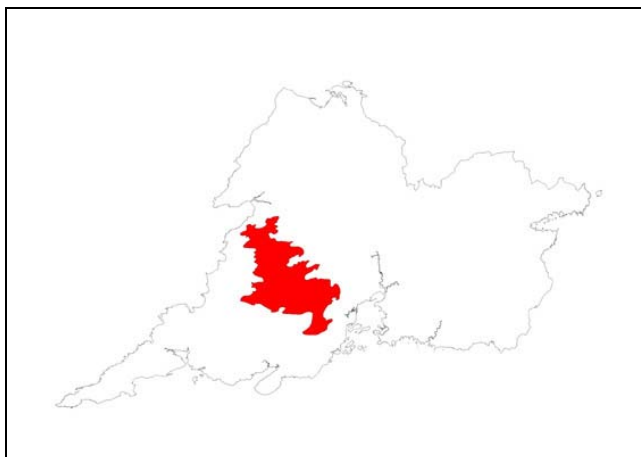
The shorelines of the loughs such as Drumcullaun Lough are designated as high amenity under the county development plan.

Forces for Change

-
- Water quality impacts through agricultural practices or development
 - Afforestation
 - Agricultural decline and loss of landscape elements
 - Abandonment of old stone houses and construction of new bungalows
 - Bungalow development towards Ennis in the east and Lahinch in the west
 - The identification of Kilmaley as a potential area for alternative energy
-

Principles for Landscape Management

-
- Development will be more appropriately sited in lower drumlin areas and screened with native planting, reflecting mix of hedgerows
 - Advice and guidance on design, siting and boundary treatments that reflect local landscape character should be made available
 - Careful consideration needs to be given to siting and planting regime of new forestry plantations, in small-scale irregular plantations with a good proportion of deciduous trees. Irregular edges following the landform and varied age structure will help prevent creation of large uniform blocks
 - Encourage uptake of REPS
 - Encourage local area plan for North Clare
-



Key Characteristics

- Land rises to moorland hills of Sliabh Callan and Ben Dash.
- Mix of pasture, silage and coniferous habitats.
- Very little settlement, concentrated along communication routes and in outer parts of the area.
- Areas become increasingly rural as one travels eastwards, away from the coast.
- Communications is aligned along valleys.
- Uplands very exposed, valleys contained but unenclosed. Long views south from Ben Dash towards Shannon Estuary.

Typical Photograph: Sliabh Callan Uplands



Landscape Character Types, Historic Landscape Types and Habitat Types

LCTs	HLTs	HLT codes	HTs	HT
Upland Hills	Enclosed Land 1	EL1	Montane heath	HH4
Moorland Hills	Enclosed Land 2	EL2	Wet heath	HH3
	Enclosed Land 3	EL3	Conifer plantation	WD4
	Enclosed Land 4	EL4	Wet grassland	GS4
	Rough Ground 1	RG1	Improved agricultural grassland	GA1
	Rough Ground 2	RG2	Upland blanket bog	PB2
	Rough Ground 3	RG3	Hedgerows	WL1
	Broadleaved Woodland	BL	Marsh	GM1
	Designed Landscape	DL	Eroding/upland rivers	FW1
	Water Bodies 1	WB1		
	Devotional and Ritual	DR		

Landscape Character Area Extent

Upland hills and slopes of Sliabh Callan and Ben Dash extending south to Lisnafaha, west to Caheraghacullin, to N67 near Rineen, and northwards towards Ennistymon.

Geology and Landform

This LCA is underlain by Namurian sandstone shale, and is consequently overlain with sandstone and shale derived till. However, there are significantly greater peat deposits owing in part to the higher elevation, and bedrock is frequently within one metre of the surface or exposed as small ridges, generally aligned northeast-southwest.

It is an upland area, composed of hills with quite extensive plateaux in parts. Broad valleys are found between upland areas and are aligned northeast-southwest.

Land Cover and Ecology

Peats are the most common soil type with gleys in lower areas and very limited pockets of brown earths. The area is extensively afforested, largely with coniferous plantations. This is interspersed with blanket bog and marshy areas, and quite large amounts of more recent planting. Land use on the lower areas is a mixture of pasture and silage production. Doon Lough is the largest water body within the area.

Currently, there are no SAC designations within this area, though there remain quite considerable tracts of blanket bogs, particularly in the southern part of the LCA.

Historical & Human Influences

The blanket bog and moorland Sliabh Callan and Ben Dash forms a particular historic landscape. Practically devoid of monuments (as shown on the 'RMP') nonetheless people have been utilising the area from time immemorial. It is likely that parts of the hillsides were used for seasonal pasture (transhumance) as evidenced by some of the place names such as Boolynamweel (from the Irish 'Bualie'). Turf has been extracted from the thick growths of blanket bog, which can accumulate quite deep in upland hollows. It is possible that some of the lower slopes were more intensively used prior to the Bronze Age, during a period of milder climate and a megalithic tomb on the southern slopes of Sliabh Callan may indicate a community nearby. If so there may be buried relict landscapes in some areas.

Today, the upper slopes are generally open and exposed, with occasional enclosure by post and wire fencing. The middle slopes are increasingly afforested, otherwise vegetation is sparse except along river valleys where woody vegetation occurs along the river corridor. Lower slopes are frequently enclosed by square, geometric fields with hedgerows and hedgebanks. Fuchsia is frequently associated with hedgerows close to dwellings, though it also found on more exposed ground.

There is no apparent settlement on the upper slopes, with occasional farm buildings on lower slopes. A traditional feature associated with settlements in this area is the stone slabbed gate posts. There is increasing linear development along minor roads with panoramic views of the coast. The south facing slopes of Ben Dash are also more settled, particularly where views are available, with hedgerows and some trees. There is an increasing rural and remote feel as one travels away from the coastal area, accompanied by an increase in abandoned or derelict farmsteads. Long straight roads radiate from Milltown Malbay, but otherwise the roads and watercourse reflect the

northeast southwest orientation of the landform. Lissycasey is the only main settlement within this sparsely settled area.

Landscape Condition and Sensitivity

This area has a strong sense of remoteness, particularly to the further north one travels. The north-west slopes of Sliabh Callan have not been extensively planted. This combined with the sparse planting on Sliabhcurry contributes to the framing of the Inagh River valley and permits open long views across the valley.

Forestry is the principal detractor when it has been planted insensitively. Telegraph poles and pylons, frequently located on the higher ground, also tend to be visible within this open landscape. The upland areas are very sensitive, again due to their open and exposed nature. Valley areas are less sensitive partly due to infrastructure and forestry development already located within these areas. The southern slopes of Ben Dash are quite sensitive as it has a smaller scale landscape with wide attractive views. These long views south are interrupted by the very visible power stations on the Shannon estuary.

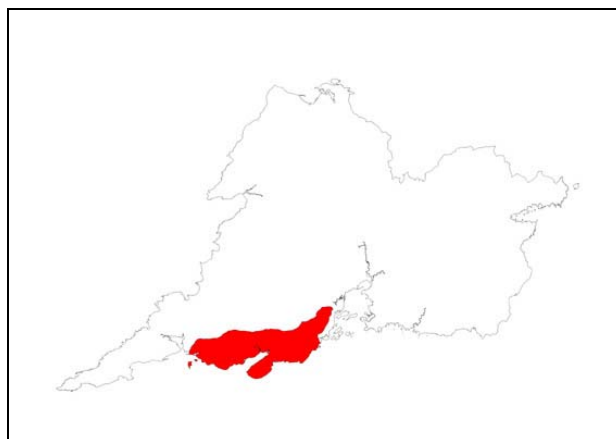
The natural grassland located at Ben Dash, and the bogs of Sliabh Callan and Ben Dash, are classified as visually vulnerable and sensitive under the county development plan.

Forces for Change

-
- Pressures include windfarm and mast development on higher parts of Sliabh Callan, Ben Dash may be a suitable alternative location for such development.
 - Expansion of forestry across uplands
 - Turbary
 - Intensification of agriculture on southern slopes
 - New inappropriately sited and designed residential development
-

Principles for Landscape Management

-
- Advice and guidance should be made available on design, siting and boundary treatments that reflect local landscape character
 - Careful consideration should be given to siting and planting regime of new forestry plantations, in small-scale irregular plantations with a good proportion of deciduous trees. Irregular edges following the landform and varied age structure will help prevent creation of large uniform blocks
 - Preserve the remaining areas of blanket bog and its associated traditional uses
 - Maintain if possible the sense of openness in upland areas, in particular the pristine landscape value of Sliabh Call and Ben Dash
-



Key Characteristics

- Prominently ridged landscape, with linear hills aligned south-west to north-east.
- Secluded areas interspersed with more open views. Views are afforded across the Shannon estuary and across to Limerick from elevated areas and on the estuary shores.
- Coastal fringe is flatter and slopes down towards the sea.
- Diverse habitat and land cover.
- Scattery Island is an important historical and focal feature.
- Complex patterns of pasture, woodland and scrub habitats.
- Old Vandeleur Estate plantations, gardens and restored woodland recreation area.

Typical Photograph: Shannon Estuary



Landscape Character Types, Historic Landscape Types and Habitat Types

LCTs	HLTs	HLT code	HT's	HT code
Farmed lowland ridges	Enclosed Land 1	EL1	Dry Calcareous and neutral grassland	GS1
	Enclosed Land 2	EL2	Conifer Plantation	WD4
	Enclosed Land 3	EL3	Hedgerows	WL1
	Enclosed Land 4	EL4	Wet grassland	GS4
	Rough Ground 1	RG1	Broadleaved woodland	WD1
	Rough Ground 2	RG2	Stone walls and other stonework	BL1
	Rough Ground 3	RG3	Scrub	WS1
	Broadleaved Woodland	BL	Lakes and ponds	FL
	Designed Landscape	DL	Depositing lowland river	FW2
	Extractive Industry Quarry	EIQ		
	Settlement 2	S2		
	Water Bodies 1	WB1		
	Estuarine Intertidal	EI		
	Devotional and Ritual	DR		

Landscape Character Area Extent

This area extends from Ballynacally in the north along the R473, encompassing the Labasheeda peninsula and continuing along the Shannon estuary to Kilrush. It is fringed by the Kilrush farmlands to the north.

Geology and Landform

Namurian sandstone shale with faults underlie this LCA. These faults account for the distinctive linear ridges found along the eastern part of the

LCA. Exposed bedrock or within one metre of the surface is the most dominant surface geology feature within this area, interspersed with till derived from the bedrock and peat deposits.

This area is composed of a prominently ridged landscape, with linear hills aligned south-west to north-east. The coastal fringe is flatter and slopes towards the Shannon. It also becomes increasingly flatter towards Kilrush.

Land Cover and Ecology

A variety of soils occur within this area, notably brown earths, brown podzolics and complexes. Although grassland predominates, there are small areas of blanket bog towards the east and pockets of natural grassland. There are also small pockets of broadleaf woodland around Kilrush. Small areas of plantation forestry are also apparent within the wider pasture grassland.

There are a number of SAC designations within this area. Scattery Island is designated due to its rich grassland species and numbers of birds including Oystercatchers. Clonderlaw Bay, a large shallow bay behind the Labasheeda peninsula is also designated, largely due to its importance as a site for wildfowl. The oak woodland, Cahiracon Woods, south of Killadysert is designated due to its habitat being classified as Annex I habitat. Two linked lakes, Cloonsnaghta and Gortaglass, northwest of Killadysert, are regarded as significant due to the recording of the Arctic Char in the 1970s, though no recent survey has been undertaken to verify its continued presence.

Historical & Human Influences

This area is similar to the improved farmland on the opposing side of the Fergus estuary with a significant proportion of the land divided into the characteristic, straight-sided fields of improved farmland (EL4). It has some notable areas of parkland surrounding big houses (DL) and was considered desirable to successive waves of immigration. Partly, this was a product of regulations imposing a 1-mile exclusion zone from the Shannon shoreline on populations thought not to be loyal to the British State in the seventeenth century. However, in common with most of Clare, the largest proportion of the land is occupied by mixed fields with sinuous and straight-edged boundaries (EL2).

There is an area of rough ground with sinuous boundaries (RG2) at Bollydoolan, which was presumably common seasonal pasture in the past. South of it was rough ground with straight boundaries (RG3), which may have been divided at a later stage.

There is a large area of extensive mudflats at Clonderlaw Bay (EI) and Scattery Island monastery had important continental links and forms a prominent landscape feature, overlooked from many places inland. It continues to have a devotional significance and is maintained as a nature reserve and a cultural resource by Dúchas.

Today, large stone walls and earthbanks mark field boundaries with rocky outcrops apparent in some fields reflecting the surface geology. There are increased hedgerows and mature trees around Labasheeda.

Settlement is scattered and composed frequently of stone single storey dwellings on Labasheeda, with some significant middlemen estates and houses. The villages of Kilrush, Killadysert and Labasheeda are the principal settlements. Communications are via the N68, with a number of regional roads and a network of narrow (often quite straight) lanes radiating from these routes.

The promontory forts along the estuary were identified by consultees as being of value.

Landscape Condition and Sensitivity

This area is of variable condition. In parts, the traditional landscape pattern dominates. The area is more intact in the east and north, where it is less accessible. Occasional modern residential development along the estuary line can be inappropriate and not reflective of local styles.

Around Kilrush and along the coast, tourist and holiday home development has also adversely affected the landscape. Moneypoint power station is a singularly large-scale detractor on the Shannon, accompanied by a number of prominent pylons. The ridges create many small-scale areas unsuitable for large development.

The sensitivity remains higher in the more intact areas, with elevated areas also sensitive due to their increased visibility. The estuary coastline is partly degraded due to infrastructure and the industrial activity within the Shannon estuary.

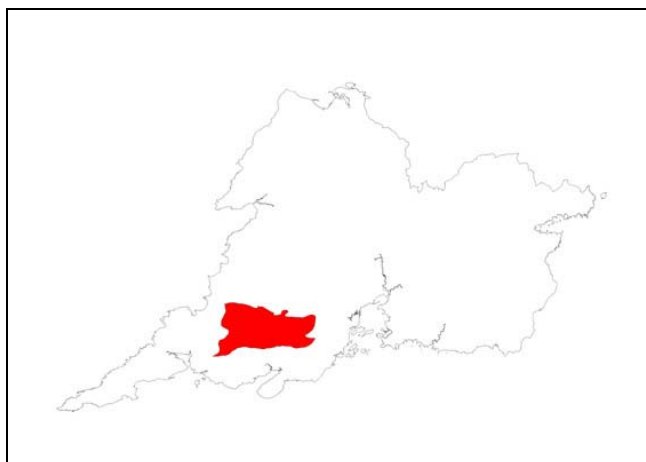
The woodland scrub around Clonderlaw Bay and the broadleaved areas in the grounds of Kilrush house are classified as visually vulnerable and sensitive under the county development plan. The coastline to Clonderlaw Bay is also classified as an area of high amenity under this plan.

Forces for Change

-
- Plantation of coniferous forestry
 - Insensitive housing development
 - Air quality problems associated with Moneypoint, identified by consultees
 - Agricultural decline – abandonment of farming practices
-

Principles for Landscape Management

-
- Advice and guidance should be made available on design, siting and boundary treatments that reflect local landscape character
 - Careful consideration needs to be given to siting and planting regime of new forestry plantations, in small-scale irregular plantations with a good proportion of deciduous trees. Irregular edges following the landform and varied age structure will help prevent creation of large uniform blocks
 - Integrated planning is needed for the estuarine area as developments are highly visible
 - Encourage uptake of REPS
-



Key Characteristics

- Undulating to rolling hills, medium-high elevation. Some drumlin-type landforms but these do not dominate.
- Complex mix of moorland and farmland.
- Occasional flatter areas within hills, such as Creegh River Valley
- Scattered settlement across the area with Kilmihil, Creegh and Curraclare the only villages.
- Kilmihil town is a designated ACA.

Typical Photograph: Kilmihil Farmlands



Landscape Character Types, Historic Landscape Types and Habitat Types

LCTs	HLTs	HLT codes	HTs	HT codes
Farmed Rolling Hills	Enclosed Land 2	EL2	Improved agricultural grassland	GA1
	Enclosed Land 3	EL3	Marsh	GM1
	Enclosed Land 4	EL4	Scrub	WS1
	Rough Ground 2	RG2	Conifer plantation	WD4
	Rough Ground 1	RG3	Broadleaved woodland	WD1
	Settlement 1	S1	Wet grassland	GS4
	Waster Water Bodies 1	WB1		
	Devotional and Ritual	DR		

Landscape Character Extent

This area extends north above Kilrush and is framed by the Sliabh Callan uplands.

Geology and Landform

This area is totally underlain by Namurian sandstone and shale. Namurian derived till, peats and bedrock exposed or within one metre of the surface are the principal surface geology types. This area is composed of undulating to rolling hills with some drumlin type landforms, however these are not dominant. A number of rivers and small loughs drain through this area, including the Doonbeg, Creegh and Cloon rivers.

Land Cover and Ecology

Soils are a mixture of brown podzolics, gleys and peats with occasional brown earth pockets. Landcover is largely grassland, with small coniferous plantations, quite extensive marshy and raised bog areas, and limited patches of blanket bog on more elevated ground. Land becomes increasingly rushy on the lower ground and these areas are frequently planted. There are better pastures on the well-drained higher areas. Natural woodland is generally sparse, though hedgerows are apparent in more sheltered areas.

Historical & Human Influences

This area is predominantly a historically mix of small family farms with irregular fields bounded with straight and sinuous hedges (EL2). However, the central village of Kilmihil is girt with a belt of straight-edged, possibly improved fields (EL4). In turn, on many sides, this belt of enclosed land is surrounded with contrasting rough ground with sinuous irregular boundaries (RG2), fingers of which extend towards the settlement. This may imply that the more extensive outfield grazing was enclosed earlier than the market-oriented farmland, if we assume sinuosity or straightness to be a function of time (the landform being similar). Some of the rough ground is now planted with conifer. The determining factor in what became enclosed or rough ground is the soil, peats predominating in the rough ground areas and gleys and brown podzolics in the enclosed areas. Ritual continuity is demonstrated by the high frequency of holy wells in the area and, where combined in a complex, as with the church and well at Churchtown, is a determining factor in the way the perceptual landscape is presented.

Hedgerows enclose fields generally in the lower and more sheltered areas, with post and wire commonly enclosing plantations. Montbrechia is often commonly planted along road fringes close to dwellings. There are a high number of derelict buildings. Settlement is very dispersed, with many houses accessed via narrow lanes off the roads. Kilmihil is the only village within this area. A major communication route is provided by the N68, otherwise a network of small, narrow roads provides access within the area.

Consultees identified the gravel mounds and pencil graves at Cooraclare as being of value.

Landscape Condition and Sensitivity

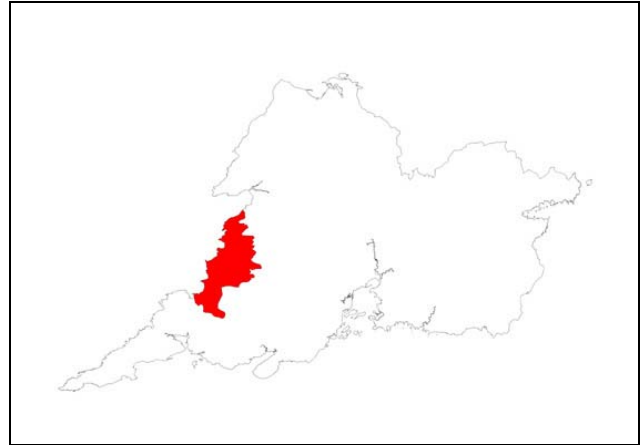
The condition of this area is moderate, with the areas close to the principal corridor routes disturbed and showing evidence of agricultural decline and lack of maintenance. Away from the major route, it is more intact and rural in character. However, even these areas are subject to agricultural degradation, arising from intensification, afforestation, abandonment and the construction of poorly sited farm buildings.

Forces for Change

-
- Dereliction of buildings
 - Agricultural decline
 - Unsympathetic afforestation, merging of existing small plantations into larger tracts
 - Inappropriately sited agricultural buildings
 - Opportunities for expansion of residential and infrastructure within Kilmihil (West Clare Local Area Plan)
-

Principles for Landscape Management

-
- Avoid merging small forestry plantations
 - Encourage maintenance of hedgerows and uptake of REPS
 - Restore abandoned traditional buildings
 - Advise new development in terms of siting, design and boundary treatments
 - Settlement plans should seek to ensure conservation and enhancement of the existing character and quality of settlement, particularly in Kilmihil, and retain the local centre within walking distance of residential development
-



Key Characteristics

- Gently undulating pastoral farmland.
- Indented coastline, with some wide sandy bays.
- Strong Atlantic influence through the open and windswept character, reinforced by minimal tree cover and hedgerows.
- Views to Sliabh Callan, often framed by shallow valleys and along the coastline.
- Scattered but frequent settlement. Often individual houses but several small villages and larger settlements including Spanish Point and Milltown Malbay.

Typical Photograph: Malbay Coastal Farmland



Landscape Character Types, Historic Landscape Types and Habitat Types

LCTs	HLTs	HLT codes	HTs	HT codes
Coastal Plain and Dunes	Enclosed Land 1	EL1	Marram dunes	CD2
Coastal Farmland	Enclosed Land 2	EL2	Improved agricultural grassland	GA1
	Enclosed Land 3	EL3	Amenity grassland	GA2
	Enclosed Land 4	EL4	Sand shores	LS2
	Rough Ground 2	RG2	Conifer plantation	WD4
	Rough Ground 3	RG3	Shingle and gravel shores	LS1
	Water Bodies 1	WB1	Wet grassland	GS4
	Coastal and Coastline Intertidal	CI	Marsh	GM1
	Dunes	D	Rocky sea cliffs	CS1
	Devotional and Ritual	DR	Lagoons	CW1
			Hedgerows	WL1
			Tidal flats	CW2

Landscape Character Area Extent

This gently sloping area between the Sliabh Callan Uplands and the Atlantic coast forms this Landscape Character Area, which extends along the coast to north of Doonbeg.

Geology and Landform

This area is also underlain by Namurian sandstone and shale. Till derived from this bedrock predominates, with very limited peat deposits that increase

towards Loop Head and the Sragh Bog area (in Loop Head LCA). Bedrock is close to the surface or exposed along much of the shoreline and Mutton Island. It is largely a low lying coastal area, rising up to 100m above sea level at its highest elevation and sloping gently towards the coastline. The coastline is composed of flat rocky headlands and bays with long broad beaches of bright yellow sand, with shingle berms.

Land Cover and Ecology

Gleys dominate this area, with occasional peat deposits and brown podzolics further inland. Land cover is overwhelmingly grassland with small coniferous plantations. Pasture and hay production is evident throughout the area. Due to the open and exposed nature of the landscape, there is very limited woody vegetation, and where it occurs it is windswept. This area contains valuable dune ecosystems; some are designated, such as the Special Area of Conservation (SAC) at White Strand and the coastal and marine area from Carrowmore Point to Spanish Point and islands. This latter designation is due to the number of coastal habitats found within this area, including sandflats, a lagoon, and rocky sea cliffs.

Historical & Human Influences

From Spanish Point to the Annageeragh River is a large block of farmland with straight-edged fields (EL4) similar to the improved land either side of the Fergus estuary. Elsewhere the landscape is dominated by mixed, irregular fields with both sinuous and straight boundaries (EL2).

Milltown Malbay was a resort town that acquired local agricultural prominence because of the rail connections it once enjoyed. Its presence may have influenced the type of field enclosure nearby. The other towns are seaside resorts.

The coast has seen a number of shipwrecks (the memory of the Armada preserved in the name Spanish Point). The coastline and slopes up to the interior have been heavily settled throughout history as they enjoy a range of resources. Promontory forts in a good state of preservation dominate coastal views across bays and on Mutton Island. Castle houses near promontories provide a similar visual focus to the landscape. Megalithic tombs lie near bluffs overlooking the coastal fringe and ringforts dot the landscape. There are a number of ruined churches and graveyards with that of Kilmurry being of particular prominence. Marked prominently on a late seventeenth century map it features a fine series of overground vaults.

Today, angular field patterns are common within the gentle valleys, and are usually enclosed by hedgerows. Smaller, more traditional fields are present in more elevated areas. Settlement is scattered but frequent. Dwellings are composed of traditional stone cottages and modern buildings, usually single storey. Traditional stone cottages and occasional turf roofed cottages still survive, such as the turf roofed cottage at the junction of N67 and R484.

Walls are sometimes built from beach shingle. There are also several small villages and larger settlements including Spanish Point and Milltown Malbay.

An angular pattern of roads is apparent and many roads are built on embankments. Long distance views are afforded to higher grounds in the east and along the coastline.

Consultees identified the church and graveyard at Killard and Bishops Island as being of landscape value.

Landscape Condition and Sensitivity

The more hilly areas in the east are in better condition, with more traditional field patterns evident, and less tourist development. The least intact areas are those around Spanish Point where tourist development has degraded the coastal landscape. Caravan parks are a particularly detractive feature due to lack of screening. The network of telegraph poles tends to be highly visible in the open landscape and the open areas generally are sensitive to development due to lack of natural screening. The coastal areas to the south are in slightly better condition.

Given the somewhat open nature of the scenery, historic monuments in the area provide landmarks and points for local identity as well as interest for the many tourists who visit the area. The intervisibility of promontory forts is a particular case of this, given the general tourist activity.

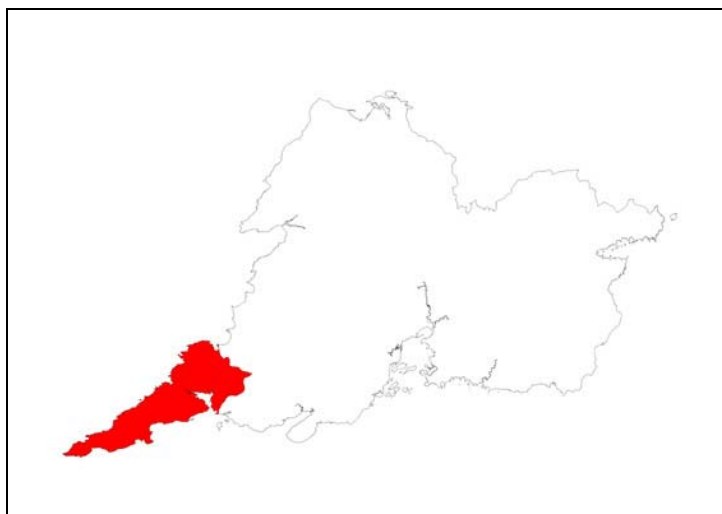
The tidal flats to the east of Whitestrand and Whitestrand itself are designated as visually sensitive and vulnerable under the county development plan. The whole of this coastline is also classified as an area of high amenity under this plan.

Forces for Change

-
- Insensitive tourism development, such as caravan parks, second homes and golf courses
 - Windfarms or other tall structures such as phone masts
 - Second home development or inappropriate housing development
-

Principles for Landscape Management

-
- Further large scale development should be concentrated in existing centres such as Milltown Malbay
 - Dune systems should be strictly protected
 - Avoid the ongoing development of tourism facilities along the coastal road
 - Any new development should be low lying to merge with flat landscape
 - Restore abandoned buildings and provide guidance on design, siting and treatment of new development
-



Key Characteristics

- Flat peninsular farmland – very distinctive ladder fields, estuaries, salt marsh and mudflats, sand and boulder coves, shelving coastal rocks, vertical cliffs.
- Coast becomes increasingly dramatic towards Loop Head with high cliffs, arches, stacks and rocky inlets. More sheltered bays are typically on the southern side of the peninsula.
- The presence of the sea is always apparent and the character of the land reflects the mood of the weather and the storminess of the seas.
- The area is remote and feels remote and detached, with peaceful rural unspoilt qualities.
- Settlement is more concentrated along the southern peninsula, increasing again towards Kilkee.
- Kilkee is a designated ACA (Architectural Area).

Typical Photograph: Ladder Fields Loop Head Peninsula



Landscape Character Types, Historic Landscape Types and Habitat Types

LCTs	HLTs	HLTs codes	HTs	HT codes
Peninsular Farmland	Enclosed Land 2	EL2	Hedgerows	WL1
Farmed Estuarine Farmland and Islands	Enclosed Land 3	EL3	Marsh	GM1
Coastal Plain and Dunes	Enclosed Land 4	EL4	Exposed rocky shores	LR1
	Rough Ground 1	RG1	Broadleaved woodland	WD1
	Rough Ground 2	RG2	Scrub	WS1
	Rough Ground 3	RG3	Improved agricultural grassland	GA1
	Designed Landscape	DL	Estuaries	MW4
	Extractive Industry Quarry	EIQ	Sea inlets and bays	MW2
	Settlement 1	S1	Muddy sandy shores	LS3
	Water Bodies 1	WB1	Sea caves	LR5
	Water Bodies 2	WB2	Shingle and gravel shores	LS1
	Extractive Industry	EI	Rocky sea cliffs	CS1
	Coastline and Coastal Intertidal	CI	Shingle and gravel banks	CB1
	Devotional and Ritual	DR	Upland blanket bog	PB2
			Dry calcareous and neutral grassland	GS1

Landscape Character Area Extent

The Loop Head peninsula is almost an island and extends from Doonbeg and Poolnasherry Bay to Loop Head in the far west.

Geology and Landform

This area is underlain by Namurian sandstone and shale, with bedrock derived till the dominant surface geology. There are significant pockets of peat deposits, notably within the Sragh Bog complex. The coast is increasingly dramatic towards Loop Head with high cliffs, arches, stacks, rocky inlets and more sheltered bays typically on the southern side of the peninsula. The folding of the rocks into synclines has created spectacular coastal forms such as The Bridges of Ross and sweeping slabs near Castle Point. The southern part of this LCA is more sheltered and contains estuaries, salt marsh and mudflats.

The peninsula is largely flat with distinctive long low ridges and hills close to the coastline both to the north and south e.g. Rehy Hill, Oldtown, Moveen Hill. This peninsula rises to 100m at Loop Head.

Land cover and Ecology

Gleys are the predominant soil type and have been well managed within this area to produce quite good pasture. There are pockets of brown earths with Loop Head itself containing a patch of podzols. Again peat deposits are concentrated around the Sragh Bog area.

Land cover is largely grassland with sheep and cattle grazing. There are stretches of natural coastal grassland along the inaccessible northern coastline. Vegetation in the area is very sparse, the only trees being sculptured into leaning windswept shapes. These lean distinctively away from the prevailing westerly winds.

This area has a number of SAC designations, including Loop Head, which contain important colonies of seabirds and contain a number of swards of botanical interest, Tullaher Lough and Bog (also known as Sragh Bog) is an unusual example of raised bog within the county.

Historical & Human Influences

Around Moanmore and Tullaher Loughs there are large areas of rough ground, some of which is undivided (RG1). It is largely formed of open peat moor and devoid of monuments. However, given its proximity to a heavily settled coastline, it is probable that it has been extensively used throughout history. Peat cutting and, possibly, seasonal pasture are likely, and low elevations (23m AOD) make it a distinct possibility that this area was settled prior to colder wetter conditions starting in the Bronze Age. The area west to Kilkee is heavily studded with ringforts and there are numerous cillíns, graveyards and holy wells. From the Bronze Age on this area has supported a large population. The enclosing fields are either the more common mixture sinuous and straight boundaries (EL2) or, in discrete areas, long thin fields

sometimes called ladder farms (EL3). The latter may be enclosed common fields.

Poulnasharry Bay (EI) was historically a very productive food source and the centre of it is described as 'Oyster Hole' on late eighteenth century maps (Pelham). Similar to the other estuaries, the mudflats are a distinct historic landscape dotted with preserved, low-lying remains of fish traps etc.

The Atlantic coastal resources (CI) were slightly different but flat fish could be expected in sandy bays and seaweed collection allowed the development of an extensive roadside settlement as at Coosheen.

Towards its tip, Loop Head peninsula has predominantly long rectilinear fields EL3, which may be nineteenth and twentieth century enclosures of previously common fields. Those west of Kilbaha, for instance, were perpendicular to a road built after the 1787 Grand Jury map and must postdate its construction. There is open ground at the head itself and large areas of similar straight edged fields that line the Shannon estuary. Promontory forts dot the headlands and views to and from them add to the visual amenity of the area. A battery at Kilcredaun attests to a later period of defence.

Small traditional cottages and farms are scattered across the area. These are typically painted white. A distinctive layout of dwellings is quite common, with the cottage and a shed, usually corrugated, forming an L shape and affording shelter from the wind. The majority of the scattered settlement is on the more sheltered southern side of the peninsular. Roads are straight and narrow and fields are generally enclosed within banks in dryer areas or on embankments in wetter areas. Fishing is part of the economy of the area, with small harbours and quays and some fish farming on the southern side.

Consultees identified a number of valued features within this LCA, including the old ferry at Cammoge Point and the Caves at Kilkee. These are known as the amphitheatre and at low tide one can access a cave known as the Pink Cave, which is full of sea anemones. The mobile church, known as the Ark, was also considered to be of significant value. Sragh Bog was also identified as an area of particular value due to its diverse flora and archaeological remains. The dunes at Doonbeg and the Blue Pool at Donegal Point were also identified by consultees as being of importance.

Landscape Condition and Sensitivity

The area is in good condition and is increasingly intact as one travels west. Traditional settlement patterns and the distinctive ladder fields remain largely unaffected by modern development and agricultural change. Both farm buildings and land appear to be well maintained and some larger modern farm buildings are apparent within the landscape.

The area is relatively free from tourist related development with a few scattered car parks and picnic areas scattered along the coast, and a concentration of holiday development at Kilkee, the main settlement in the area. Here, caravan parks, amusement arcades etc indicate that this is a long established coastal resort.

Large-scale development would be very evident due to the flat open nature of the area with expansive skies. Traditional small-scale housing development of scattered white painted cottages could be accommodated. The area would be particularly vulnerable to pressures such as windfarms, masts etc.

Extensive views are afforded from the sheltered southern coast over to Kerry and along the western seaboard from Loop Head and along the northern coastline.

The natural grassland at Loop Head is classified as visually sensitive and vulnerable under the county development plan. The whole of this coastline is also designated as an area of high amenity under the same plan.

Forces for Change

-
- Insensitive tourism development
 - Large scale development
 - Agricultural change and removal of field boundaries
 - Vertical development such as windfarms and masts
 - Dereliction of traditional cottages – particularly in the Doonbeg vicinity
 - Depopulation
 - Wind farm and forestry applications close to Sragh Bog
 - Increasing pressure from new development, for example residential and tourism development at White Strand at Killard
-

Principles for Landscape Management

-
- Careful planning and siting of new tourism facilities is needed to maintain the integrity of largely unspoilt landscape
 - Advice should be available on boundary, siting and design of new developments including expansion of Kilkee
 - Encourage uptake of REPS and/or enter management agreements with farmers
 - Develop principles for repopulating rural depopulated areas
 - Restore existing derelict structures and buildings
 - Settlement plans should seek to ensure conservation and enhancement of the existing character and quality of settlement particularly in Kilkee and retain the local centre within walking distance of residential development
-

INTRODUCTION

The length of the County Clare coastline totals some 344km, of which approximately 317km is on mainland Clare with the remaining 27km of coastline on the islands within the county. Of the total coastline of 344km, 99.8km is considered scenic while 46km is considered highly scenic (An Foras Forbartha, 1972).

This chapter presents the current seascape resources of Clare's coastline, outlines areas of particular scenic value and highlights key pressures on the seascapes.

The following sections provide a detailed description of the twelve Seascape Character Areas (SCAs) identified by the assessment team; the SCAs are presented in *Table 5.1* below. These SCAs are accompanied by a map displaying the seascape boundaries and their extent (*Figure 9*). This figure also includes indicative information of the seabed slope along the bays and coastline.

The SCA evaluations that follow comprise the following elements:

- a typical photograph
- a list of the LCTs which occur along the coastline of each of the SCAs
- habitat types
- extents
- a summary of the key characteristics
- brief description of geology and landform
- coastal ecology
- historic seascapes and human influences (supported by photographs where available)
- a brief description of the seascape character area including condition and sensitivity to change, and
- forces for change.

Table 5.1 *Seascape Character Areas*













SEASCAPE CHARACTER AREAS	LCTs	HLTs
1. Blackhead Bay	LU, CF	CI, RG1, RG2, RG3 EL3, EL4, DR
2. Burren	CLS, LU, LF	CI, RG2, RG3, EL4
3. Cliffs of Moher	CP, CF	CI, EL2, EL3, EL4, RG3, EIQ
4. Liscannor Bay	MH, CPD, FEF	CI, D, EL2, EL3, EL4, S2, R
5. Malbay	CF, CPD	CI, R, EL4, S2, D, DR
6. Mutton Island and White Strand	CF, CPD	CI, EL2, EL4, D, RG2, DR
7. Ballard Bay and Donegal Point	CPD	D, CI EL2, EL3, RG2

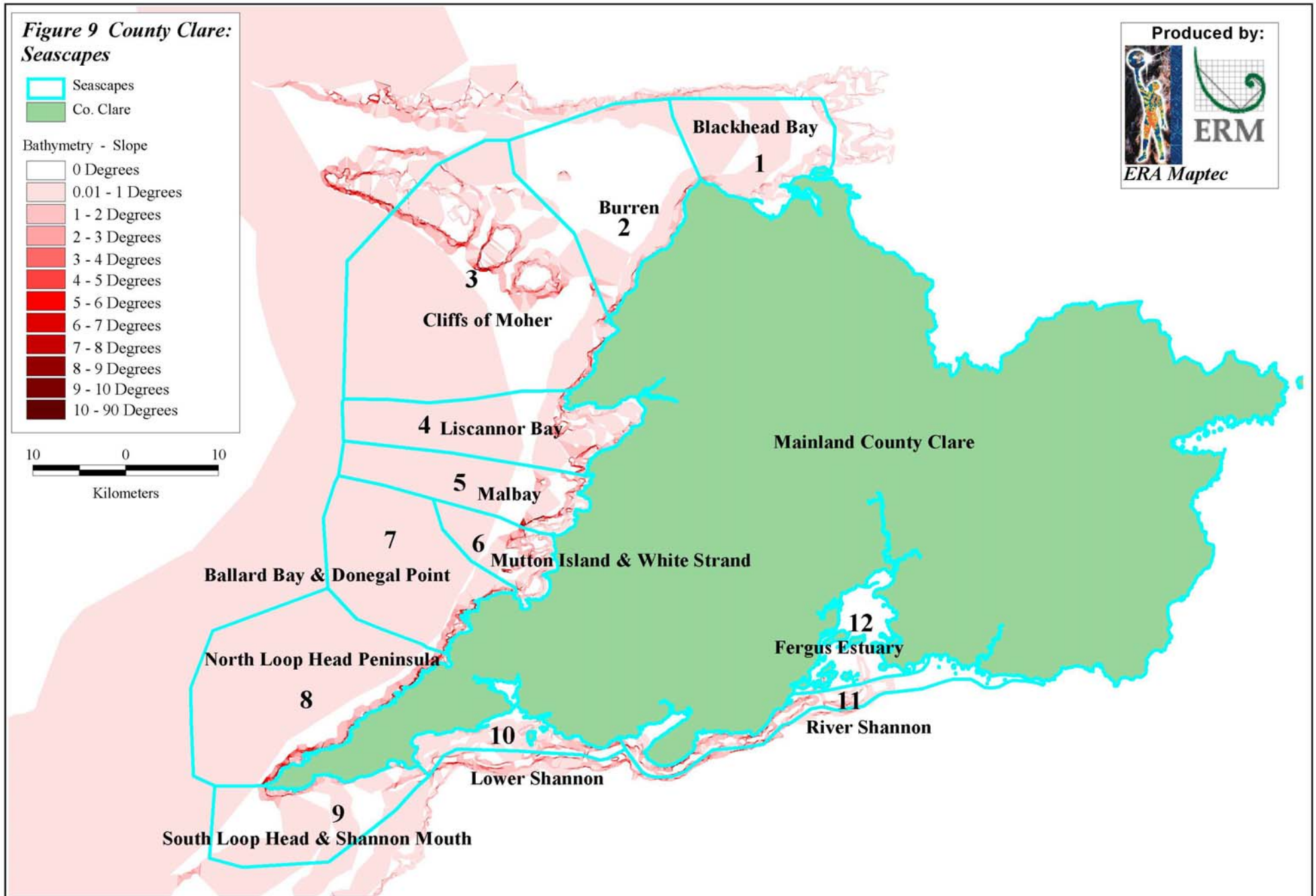
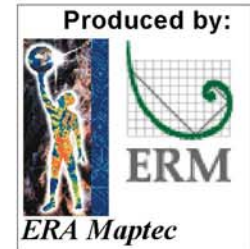
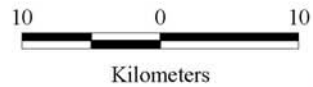
8. North Loop Head Peninsular	PF, CP	CI, EL3, EL4, RG3, RG3
9. South Loop Head and Shannon Mouth	PF	EI, DR, EL2, EL3, EL4, S2
10. Lower Shannon	FEF	EI, DR, EL2, EL3, EL4, S2
11. River Shannon	FEF	EI, EL4, EL2, RG2, DR
12. Fergus Estuary	FEF	EI, EL4, EL2, DR, DL, R

Figure 9 County Clare: Seascapes

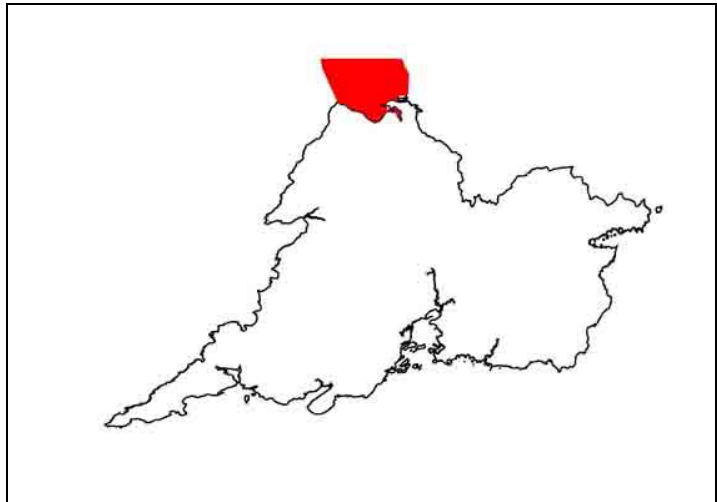
-  Seascapes
-  Co. Clare

Bathymetry - Slope

-  0 Degrees
-  0.01 - 1 Degrees
-  1 - 2 Degrees
-  2 - 3 Degrees
-  3 - 4 Degrees
-  4 - 5 Degrees
-  5 - 6 Degrees
-  6 - 7 Degrees
-  7 - 8 Degrees
-  8 - 9 Degrees
-  9 - 10 Degrees
-  10 - 90 Degrees



AREA 1: BLACKHEAD BAY



Key Characteristics

- This area consists of estuarine mudflats, with coastal limestone farmland and limestone valleys reaching the coast. Dry limestone valleys drain into these estuaries.
- Islands are a feature e.g. Green Island, Gall Island. These help give the area an enclosed character, together with the eastward facing Cregg Spit.
- Muckinish Point is classified as a visually vulnerable and visually sensitive area in the Clare County Development Plan.
- The Coastline from Aughinish Bay to Loop Head to Clonderalaw Bay is classified as an area of high amenity in the County Development Plan.
- Views are available across to the coast of County Galway.
- The limestone coastal shelf carries the roads and the majority of settlement.

Typical Photograph: Blackhead Lighthouse



Landscape Character types and habitat types

LCTs	HLTs	HLT codes	HT	HT codes
Limestone Upland	Coastal Intertidal	CI	Sea inlets and bays	MW2
Coastal Farmland and Islands	Rough Ground 1	RG1	Estuaries	MW4
	Rough Ground 2	RG2	Wet grassland	GS4
	Rough Ground 3	RG3	Mud shores	LS4
	Enclosed Land 3	EL3	Shingle and gravel Shores	LS1
	Enclosed Land 4	EL4	Sea Caves	LR5
	Ritual and Devotional	DR		

Seascape Character Area Extent

Blackhead Bay SCA comprises the area of Galway Bay between the County Clare border at Aughinish Point, and Black Head at the north-western tip of the county

Geology and Landform

Blackhead Bay is considered the most glaciated area within the Burren, where erratics of Galway granites are found throughout the bay. The best examples of shingle and stony beaches within the SCA are evident east of Finavarra. There are also a number of marine caves, which are a rare habitat in Irish waters. Numerous shallow and intertidal inlets, for example Muckinish, Aughinish and Kinvarra Bays, are found within the SCA.

Coastal Ecology

The SCA comprises extensive mudflats, exposed at low tide and are considered important as feeding grounds for birds. The northern part of the SCA hosts twenty-five breeding pairs of Black Guillemot and up to fifteen Black Throated Divers winter there (listed in Annex I of the EU Birds Directive).

The Blackhead Bay complex also includes habitats that support the rare sea urchin (*Paracentrotus lividus*), foliose red alga (*Phyllophora sicula*) and seagrass beds (*Zostera spp*).

Extensive maerl beds (*Phymatolithon calcareum*) are present off Finavarra Point and in Muckinish Bay. Grey Seals (*Halichoerus grypus*) are present around Ballyvaughan and Kinvarra Bay (listed on Annex II of the EU Habitats Directive). Aughinish Bay, which borders this SCA to the east, is the only area of shallow water in Ireland where beds of Piddock (*Pholas dactylus*) are reported as thriving.

Historical Seascapes and Human Influence

Ballyvaughan, at the head of Blackhead Bay, is the most successful tourist centre in the area. 'Rent an Irish Cottage' thatched cottages (developed since the 1970s) are numerous and have been sensitively designed to fit into the older village.

The limestone coastal shelf is farmed, with many farm buildings visible along the coastline. It is distinctively flat, with the steep limestone slopes of the Burren rising sharply behind it.

Historically, features of prominence include the 1810 Martello Tower at Finavarra (architecture of 'National' significance 20400205NIAH), the lighthouse (20400105NIAH) and the fort on the Black Head (Cathair Duin Irghuis); these form both viewpoints and focal points to the bay.



Finavarra Martello Tower adds focus to the point. Behind are long rectilinear fields (EL3) and rough ground with sinuous boundaries (RG2). It is skirted by the Coastal Intertidal (CI) zone.

Uniquely, this area of sea is entirely overlooked by prominent cairns and tombs which, on clear days, dominate the inner Galway Bay and have been used as navigational aids as well as memorials (e.g. Dobhach Bhrainín and Carn Suí Finn on the Black Head and even inland points like Slaibh Cairn).

The shipwreck inventory maintained by Dúchas (publication pending) includes 'many wrecks off the Clare coast' for this SCA and six within Ballyvaughan Bay. Shipwrecks provide important refuge and nursery habitats for fish and a key resource for the sea-angling industry. Shipwrecks over 100 years old enjoy legal protection and (increasingly popular) scuba dives on them are licensed by the state.

Condition and Sensitivity

The condition of Blackhead Bay is good. The area retains its undeveloped rural feel and there are no obvious detractors. The bay would however be sensitive to change. The surrounding landform prevents wider views and, as a consequence, seascape views are contained within the headlands and are focused upon the bay.

This stretch of coast has experienced significant ribbon development over the past two decades, with roadside development of one-off housing and housing clusters extending along the coast road, east and west from Ballyvaughan.

The rural and tranquil estuarine landscape is of high ecological and landscape value. It could easily be affected by inappropriate development, pollution or climate change.

The views of cairns over 500ft in elevation, from 20km distance – they are only visible in the Blackhead Bay Character Area and are not visible on the seaward side Burren Character Area

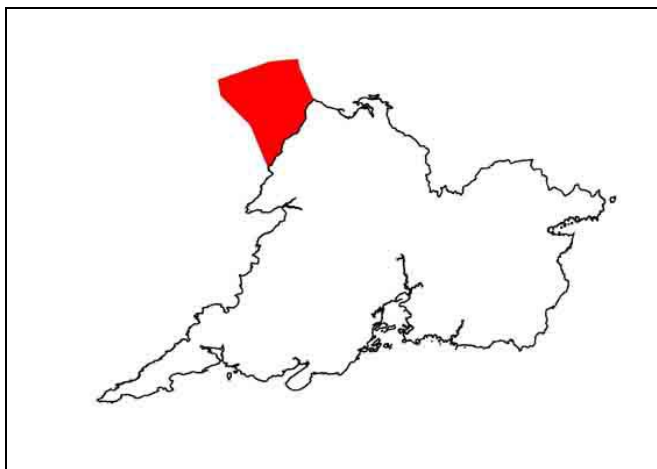
Forces for Change

-
- Impacts upon the bays due to climatic change, sea level rise, increasing intensity of storms etc
 - Impacts upon water quality due to drainage from settlements and farmland
 - Inappropriately sited coastal development in prominent locations, which would detract from the seascape value of the area within view from the Galway coast
 - Loss of traditional historic landmark features such as the Martello Towers
 - *Paracentrotus lividus* populations which have been shown to be vulnerable to over-fishing
 - Extraction of mearl
-

Principles for Seascape Management

-
- A tourism and traffic management strategy for the Burren coastline is needed
 - Careful siting and design of new developments away from highly visible locations should be enforced with guidance provided on appropriate styles, boundary treatment and siting operations
 - Promote retention and enhancement of elements such as limestone walls and vernacular buildings along the coastline
 - Linear development along the coastline should be avoided and all other development should be screened appropriately
 - Increased control of fishing and maerl extraction is needed
 - There should be continuous monitoring of water quality in coastal waters
-

AREA 2: THE BURREN



Key Characteristics

- Flat limestone pavements, limestone farmlands and low limestone cliffs are a key feature of the SCA .
- Undeveloped area, strongly characteristic and contained by the uplands of the Burren.
- Sliabh Elva meets the sea along this strip of coastline.
- Extensive views to the Aran Islands.
- Fanore is a Blue Flag beach and also classified as a visually vulnerable and visually sensitive area in the county development plan.

Typical Photograph: Fanore Bay and Hinterland



Landscape Character types and habitat types

LCTs	HLTs	HLT Codes	HT	HT codes
Coastal Limestone Slopes	Coastal Intertidal	CI	Sand shores	LS2
Limestone Uplands	Rough Ground 2	RG2	Marram dunes	CD2
Limestone Farmland	Rough Ground 3	RG3	Dune slacks	CD5
	Dunes	D	Rocky sea cliffs	CS1
	Enclosed Land 4	EL4	Exposed rocky shores	LR1

Seascape Character Area Extent

The Burren SCA is an exposed coastline extending from the north eastern tip of Blackhead Bay in north-west Clare to Doolin Point situated along the western fringe of the county.

Geology and Landform

This SCA is dominated by flat limestone pavements, limestone farmlands and low limestone cliffs. The Caher River, the only river found in the high Burren intersects through the SCA. Of significant interest are the yellow sand bay and dunes at Fanore. This dune system comprises high dunes, fore dunes and dune slacks. The dune slack is unusual with extensive exposed limestone pavement and erratics

Coastal Ecology

The coastal dune system at Fanore consists of both mobilised and stabilised areas. Sea Spurge (*Euphorbia paralias*), Sea Holly (*Eryngium maritimum*) and Marram Grass (*Ammophila arenaria*) are common species found in the high dunes. The fore dunes are largely covered by a mixture of Marram Grass (*Ammophila arenaria*) and Sand Couch (*Elymus farctus*). Throughout this SCA, trees are windswept and vegetation is sparse reflecting the level of exposure the coastline is subjected to.

Historical Seascapes and Human Influence

Settlement along the coastal strip is scattered and decreases considerably as one rises onto the higher slopes. A road hugs the coast, travelling along a narrow strip of the coastal shelf.

Characteristic of the coastal strip are the considerable numbers of intervisible dry-stone forts, many with views across the South Sound to the forts of the Aran Isles. The forts are interspersed with remnant field systems, visible in the landscape as linear bumps or lines of stones.

Condition and Sensitivity

Overall the condition of the seascape is considered good, despite some degradation due to caravan parks and holiday home development on the sand dunes at Fanore. The coastline would be sensitive to further tourism development, such as has occurred around Fanore, due to the remote and tranquil nature of the area. Further developmental pressure on the Aran Islands would also pose a threat as views of the islands are extensive from the Burren seascape.

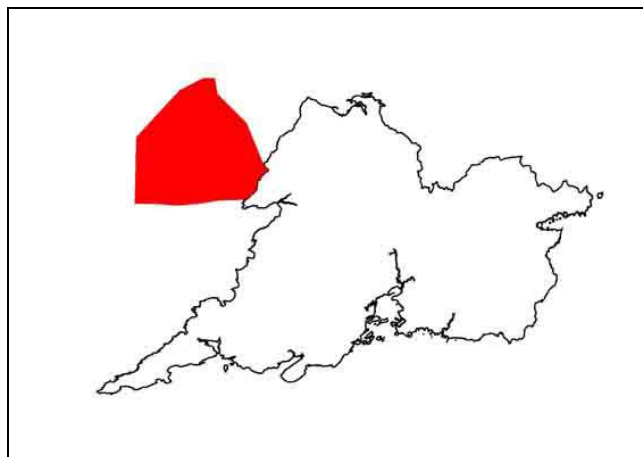
Forces for Change

-
- Impacts of boat traffic in Galway Bay, i.e. ferry traffic passing en route to the Aran Islands.
 - Increased pressure from ferry traffic and fishing boats along the shoreline
 - Increasing tourism development and loss of dune system at Fanore
 - Caravan development in isolated areas at Fanore where proper infrastructure facilities are lacking
 - Road traffic and caravan park in dune system at Fanore, is a detractor
 - Impacts of road upgrades upon landscape character
 - Prominent development within sight of the coastline: Galway, Aran Islands
 - Any new inappropriately sited new houses
 - Potential use of the area for visitor daytrips and educational and research purposes
-

Principles for Seascape Management

-
- Continuous monitoring of water quality is needed to maintain status of the Blue Flag Beach at Fanore
 - Any road improvement schemes along the coastline should be carefully designed
 - New tourist facilities should be sited outside of vulnerable areas
 - Appropriate proactive planning policies need to be developed and implemented to protect views to the Galway coastline
 - NHA and SAC designated areas should be determining factors in controlling landuse
-

AREA 3: CLIFFS OF MOHER



Key Characteristics

- The seascape of the Cliffs of Moher is considered valuable due to its high visual amenity, ornithology, ecology and geology.
- Characteristic area of water known as the South Sound.
- Tourist boat trips are also available along the cliffs.
- Infrastructure consists of a ferry crossing between Doolin (Roadford) and Inisheer, a coastal scenic drive and visitor facilities.
- Unspoilt and undeveloped landscape on the approaches to and in the vicinity of the Cliffs of Moher.
- Four wrecks are recorded for the inshore waters off Doolin
- Emergence of tourist villages are evident e.g. Doolin.

Typical Photograph: Cliffs of Moher



Landscape Character types and habitat types

LCTs	HLTs	HLT codes	HT	HT codes
Coastal Plateau	Coastal Intertidal	CI	Sedimentary sea cliffs	CS3
Coastal Farmland	Enclosed Land 2	EL2	Sea caves	LR5
	Enclosed Land 3	EL3	Exposed calcareous rock	ER2
	Enclosed Land 4	EL4	Amenity grassland	GA2
	Rough Ground 3	RG3	Improved agricultural grassland	GA1

Seascape Character Area Extent

The Cliffs of Moher seascape extends from Doolin Point to Hags Head along the western coast of County Clare.

Geology and Landform

The area is underlain by Namurian sandstone shale. High carboniferous cliffs are a distinctive part of the landscape. The cliffs are up to 203m high and extend for 7km northeast-southwest and are formed from horizontal sandstones and shales. The lines of the cliffs exhibit good faulting and slumping.

Coastal Ecology

Vegetation within this SCA is sparse with small windswept shelterbelts and occasional trees, predominately hawthorn reflecting the Atlantic influence.

The Cliffs of Moher, a Special Area of Conservation (SPA), are an internationally important area for breeding Razorbills. The area is also an important site for Fulmars, Kittiwakes and Puffins as reflected in its status as a bird habitat protected under the Wildlife Act. Maritime flora provide considerable interest to this site, where a number of rare lichens are present.

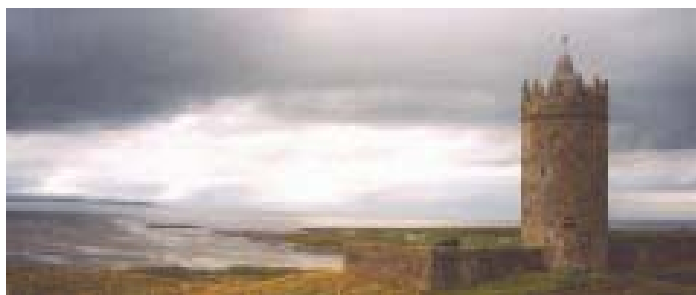
Historic Seascapes and Historic Influences

The area immediately behind Hags Head is open rough ground (RG3) but the backdrop to Branaunmore is enclosed land with irregular straight-sided fields (EL4). Long rectilinear fields are evident in the area around Doolin (EL2 – possibly enclosed former commons). In addition small castles or tower houses cluster near Doolin and overlook the Aille River crossings.



Cliffs of Moher with a narrow strip of rough ground (RG2) and straight-bounded fields behind (EL4)

Ballylaan promontory fort is a significant feature in the landscape and commands extensive views down the coast and across to the Aran Islands, and was the site of later signal towers. Doonagore Castle (signal station below) also provides a focal point and is used as a 'transit', aligned with radio masts to provide a bearing into Doolin Quay.



Doonagore Castle

There are extensive views to the Aran Islands' large stone forts, limestone pavements and small irregular fields (EL1) that are characteristic of subsistence farms.

Condition and Sensitivity

The landscape on the approaches to the Cliffs is unspoilt and undeveloped, however expanding tourist facilities in the near vicinity of the cliffs and at

Doolin are a concern. The Location, nature, and extent of all additional facilities is considered crucial to avoiding negative impacts on the existing landscape and seascape surrounding the Cliffs of Moher.

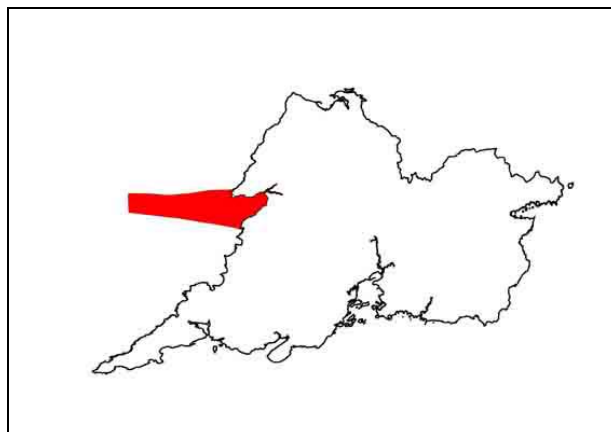
Forces for Change

-
- Further tourism development in sensitive landscapes in and around the existing access area to the Cliffs of Moher
 - Impacts of upgrading roads to accommodate coaches
 - Water pollution due to discharge from existing facilities
 - Increasing tourism development e.g. car parking and caravan facilities
 - Excessive signage
 - Trampling of cliff top vegetation
 - Demands for day time recreation facilities from domestic and foreign sources
-

Principles for Seascape Management

-
- New developments should be sensitive to the seascape and reflect traditional design forms in siting, layout and boundary treatment
 - Promote and develop tourism and traffic management plans for existing and potential tourism hotspots e.g. Cliffs of Moher
 - Linear development along the coastline should be avoided and all other development should be screened appropriately
 - Careful planning and allocation of coastal tax incentives is needed
-

AREA 4: LISCANNOR BAY



Key Characteristics

- Broad open bay that affords long views out over the Atlantic Ocean, with low shelving cliffs containing bay beyond beach.
- Sea rescue centre at Lahinch.
- Dolphins are evident around Liscannor Bay.
- A large concrete seawall is located at Lahinch.
- West facing bay that allows views of impressive sunsets.
- Lahinch is a Blue Flag Beach and is also classified as a visually vulnerable and visually sensitive area.

Typical Photograph: Lahinch



Landscape Character types and habitat types

LCTs	HLTs	HLT codes	HT	HT codes
Moorland Hills	Coastal Intertidal	CI	Tidal Rivers	CW2
Coastal Plain and Dunes	Dunes	D	Estuaries	MW4
Flat Estuarine Farmland and Islands	Enclosed Land 2	EL2	Lower salt marsh	CM1
	Enclosed Land 3	EL3	Marram dunes	CD2
	Enclosed Land 4	EL4	Sand shores	LS2
	Settlement 2	S2	Seawalls, piers and jetties	CC1
	Recreational	R		
	Extractive Industries Quarry	EIQ		

Seascape Character Area Extent

Liscannor Seascape extends from Hags Head to Cream Point (just north of Spanish Point).

Geology and Landcover

Inagh and Dealagh Rivers drain into Liscannor Bay. These channels meander through a wide, flat valley, which is sheltered from the sea by an extensive dune system to the west. The bay displays yellow sand and Liscannor rock. Liscannor rock is also exposed at a quarry near Hag’s Head (EIQ).

Coastal Ecology

Habitats surrounding the Bay include coastal dunes, an estuarine channel and its associated salt marsh habitat. These salt marshes are found along the tidal section of the valley where the species Glassworths (*Salicornia spp*) are often found, extending out onto the intertidal sands.

Bird species recorded within close proximity to the site include Greenland White-Fronted Goose, Wigeon, Teal, Mallard, Oystercatcher, Ringed Plover, Lapwing and Curlew. Marram Grass (*Ammophila arenaria*) dunes are found near O'Brien's Bridge.

Historic Seascapes and Human Influences

Settlements are centred on Liscannor and Lahinch (S2). These areas have become highly developed with numerous tourist activities, including holiday homes, apartments, car parks and amusements. However the town centres still retain their traditional character.

Recreational uses such as campsites and golf courses have traditionally clustered around Lahinch and links courses cover the dune system and mhuirbhigh (alluvial plain) behind it.

Promontory forts near Cream Point and at Freagh Point command views to similar monuments across the bay and provide a focal point for the eye – reinforced by the tower house at Freagh Point. Similar small forts concentrate near Lahinch overlooking the inner bay.

A tower house overlooks the coast at Liscannor and another dominates the crossing of the Inagh River at O'Brien's Bridge. The bridge itself was built in 1836 and is of ashlar and cut-stone construction, with decorative pilasters (20401503NIAH). Ladder fields (EL2) adorn the slopes of the north side of the bay, whilst elsewhere the fields are more irregular (EL3 and EL4). Nine shipwrecks are recorded for Liscannor Bay

Condition and Sensitivity

The overall condition of the SCA improves outside the main tourist settlements of Liscannor and Lahinch. The SCA is sensitive to change, the area is already degraded due to tourism development. Less developed smaller cliffs are more sensitive to development such as hotels, which would be highly visible.

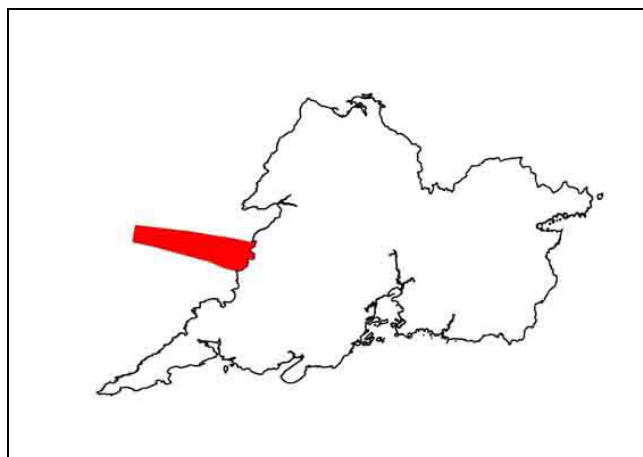
Forces For Change

-
- Pressure on dune system due to golf course development
 - Tourism development e.g. caravan parks and hostels
 - Possible pollution of bay from run off from Inagh and Dealagh Rivers which meander through low lying wet grasslands and farmlands
 - Impacts upon the bays due to climatic change, sea level rise, increasing intensity of storms etc
-

Principles for Seascape Management

-
- Control of development in designated landscapes is needed
 - Implement regular monitoring of bays, particularly in areas where tourism activities are prominent
 - Dune systems should be strictly protected
 - Avoid the ongoing development of tourism facilities along the coastal road
-

AREA 5: MALBAY



Key Characteristics

- This seascape is part of a candidate SAC extending from Spanish Point to Doonbeg and includes the neighbouring islands.
- Flat, indented coastline, with some wide sandy bays.
- Headland and bay are exposed to westerly Atlantic winds as well as affording impressive sunsets.
- Developments include airport, golf course and campsites.
- Views are available from headland towards Mutton Island, past Caherrush Point.
- Bay displays yellow sand at low tide.

Typical Photograph: Sunset North of Quilty



Landscape Character types and habitat types

LCTs	HLTs	HLT codes	HT	HT codes
Coastal Farmland and Islands	Coastal Intertidal	CI	Sea inlets and bays	MW2
Coastal Plain and Dunes	Recreational	R	Sand shores	LS2
	Enclosed Land 4	EL4	Amenity grassland	GA2
	Settlement 2	S2	Embryonic dunes	CD1
	Dunes	D	Shingle and gravel shores	LS 1
	Devotional and Ritual	DR		

Seascape Character Area Extent

Malbay SCA extends from the southern fringe of Cream Point to Mutton Island, west of Lurga Point on the mainland of County Clare.

Landcover and Geology

This area is underlain by Namurian sandstone and shale. Bedrock is close to the surface or exposed along much of the shoreline and Mutton Island. The coastline is composed of flat rocky headlands and bays with long broad beaches of bright yellow sand, with shingle and berms.

Coastal Ecology

Reefs are present in coastal waters, which probably accounts for the large numbers of wrecks; a total of twenty-five are recorded in SCA5 and SCA6. Small sand dune systems are found near Spanish Point and Lurga Point

Historic Seascapes and Human Influence

Spanish Point (S2) is a focal point for holiday home development, much of it inappropriate in terms of siting and design, situated as it is in visually prominent headland locations. An exception would be the former coastguard accommodation 'Atlantic Lodge' (20403012NIAH).

Spanish Point is named for Armada sailors from the shipwrecked San Esteban and San Marcos (SCA6 below), traditionally said to be buried at Tuama na Spaineach following their extra-judicial execution.

The religious centre of Mutton Island falls within Mal Bay although the rest of the island lies within the next SCA and lends its name to it. Mutton Island may have been the site of an early Christian monastery and its church, burial ground and cross demonstrate a continued role for contemplative pilgrimage in relative isolation.

The headlands are extremely exposed and mostly crowned with highly intervisible promontory forts.

Condition and Sensitivity

Condition improves south of Caherrush Point. However north of Caherrush Point to Spanish Point developments are scattered along the coastline, including a golf course and airfield. Inappropriate holiday home development at Spanish Point, which is a visually prominent headland, detracts from the character.

Spanish Point is highly sensitive to change due to its visible headland. Expansion on Mutton Island would also pose a threat as views to the islands are extensive from the Malbay SCA. Sightlines between promontory forts are a significant factor in their visual amenity.

Mutton Island is currently for sale (Jan 2003, €1.9million) and there is uncertainty about the future intentions of potential purchasers.

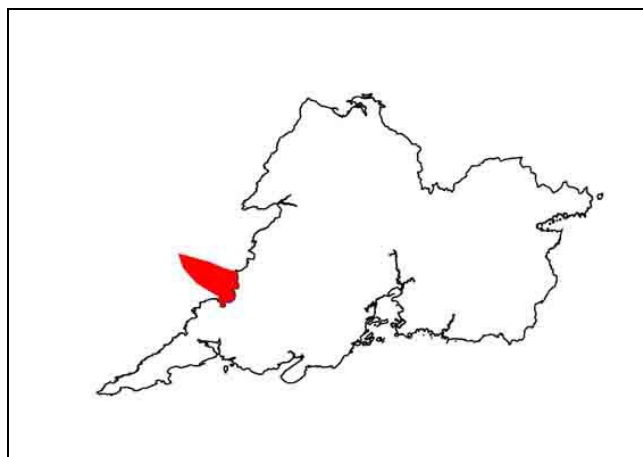
Forces for Change

-
- Holiday home development, golf courses, and campsites at Spanish Point
 - Degradation of dune system near Spanish Point
 - Visual impacts from the power station
 - Telecommunication masts visible throughout coastal farmlands
 - Global warming and sea level rise
-

Principles for Seascape Management

-
- Linear development along the coastline should be avoided and all other development should be screened appropriately
 - Careful planning and allocation of coastal tax incentives is needed
 - Implement regular monitoring of bays, particularly in areas where tourism activities are prominent
 - Dune systems should be strictly protected
 - Careful siting of telecommunication masts to protect views to the coastline is needed
-

AREA 6: MUTTON ISLAND AND WHITE STRAND



Key Characteristics

- Sandy beaches including Doonbeg, White Strand and Carricknola.
- Direct views to offshore islands and land across water.
- Lough Donnell, a sandy shallow lagoon (Annex I of the EU Habitats Directive).
- Strong sea currents at White Strand.
- White Strand is a Blue Flag Beach and also classified as a visually vulnerable and visually sensitive area.
- A prominent rath is situated adjacent to Carrowmore dune system.

Typical Photograph: White Strand



Landscape Character types and habitat types

LCTs	HLTs	HLT codes	HT	HT codes
Coastal Farmland and Islands	Coastal Intertidal	CI	Sand shores	LS2
Coastal Plain and Dunes	Enclosed Land 2	EL2	Marsh	GM1
	Enclosed Land 4	EL4	Sea walls, piers and jetties	CC1
	Dunes	D	Tree lines	WL2
	Rough Ground 2	RG2	Rocky sea cliffs	CS1
	Devotional and Ritual	DR	Embryonic dunes	CD1
	Recreational	R	Marram dunes	CD2
			Fixed dunes	CD3

Seascape Character Area Extent

This SCA is situated along the south western coast of County Clare, halfway between Miltown Malbay and Kilkee. The SCA extends from Mutton Island through Carrowmore Point to Rinnamyrall. This seascape is part of a candidate SAC extending from Spanish Point to Doonbeg and includes the neighbouring Islands.

Geology and Landform

The SCA consists of a low lying exposed coastline of flat rocky headlands and bays with long broad beaches of bright yellow sand, with shingle berms. Clay and rocky sea cliffs are also evident along the coastline of this SCA.

Coastal Ecology

A range of coastal habitats is present throughout this SCA, including an extensive area of mudflats (CI). Carrowmore Dunes (cSAC) are recognised internationally for their flora and fauna and the dune system (D) comprises embryonic dunes, marram dunes and fixed dunes. Fixed dunes are a Priority Habitat and are dominated by the grass species Red Fescue, with Marram Grass, Bird's Foot Trefoil, Bulbous Buttercup and Ribworth Plantain. Carrowmore dunes (cSAC) are also considered important for their population is of the rare Narrow-mouthed Whorl-snail (*Vertigo angustior*) and the Otter (*Lutra lutra*). There is also a freshwater marsh present to the south of Carrowmore dune system

Eroded sea walls and wind swept trees are also present throughout the area, reflecting the exposed nature of this stretch of coastline. Grey Seals (*Halichoerus grypus*) are found around Mutton Island.

Historic Seascapes and Human Influence

Flat and rolling coastal farmlands with mixed curvilinear and straight-sided fields of assorted sizes (EL2 and EL4) are evident throughout the SCA. Mutton Island is rough ground (RG2) and formerly provided seasonal grazing. The devotional and ritual aspects of the island are discussed in SCA5. Frequent promontory forts divided by wide sweeping bays allow good views one-from-another, adding to their visual amenity.

The memory of the wrecks of two Armada vessels – San Esteban (246 men) off White Strand and San Marcos (409 men) on the reef off Lurga Point – has helped to name and characterise this coast. A panel or door from one of these vessels is a popular exhibit at the county museum.

Killard Church, with a notable graveyard and adjacent holy well, forms a distinct devotional and ritual group on a small scale, and is prominent enough to be viewed across Doughmore. It was a landmark at least as early as 1685 from when it was recorded on maps. In addition to the twenty-five wrecks mentioned in SCA5, a further three shipwrecks are recorded for the waters off Doonbeg.

Condition and Sensitivity

White Strand is heavily eroded. Coastal farmland is in moderate condition but quite windswept. Immediate coastal fringe would be sensitive to large-scale development including wind farms. The SCA would also be sensitive to further holiday home development, particularly around White Strand.

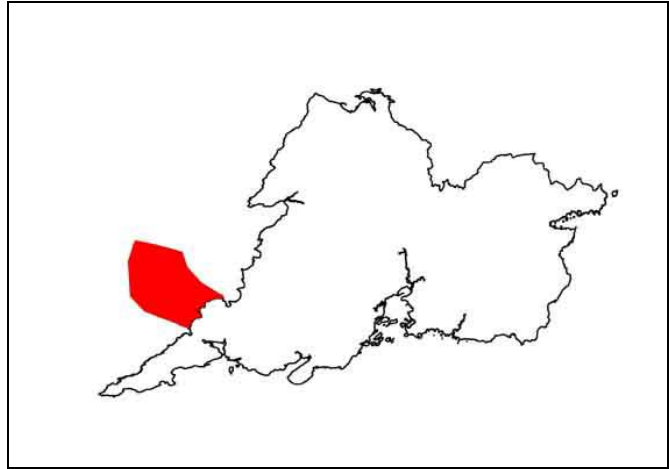
Forces for Change

-
- Erosion of beach material and boulders
 - Deliberate removal of beach material
 - Further intensification of agriculture, application of fertilizer reduces the biodiversity of dune swards
 - Potential of over grazing of dunes near White Strand
 - Existing golf course at Doonbeg
 - Cattle grazing on Carrowmore sand dunes
 - Potential arising from tourism development, holiday homes and golf clubs at White Strand and Carrowmore dune system
 - Potential use of the area for visitor daytrips and educational and research purposes
-

Principles for Seascape Management

-
- Protection of the coast from erosion and deliberate removal of material should be pursued through stricter controls and monitoring
 - Maintain ecological and seascape diversity of coastal farmlands and dunes through increased uptake of REPS
 - Careful siting and design is needed for any new developments away from highly visible/exposed areas, with guidance provided on appropriate styles, boundary treatments and siting options
 - Dune system at Carrowmore should be strictly protected
-

AREA 7: BALLARD BAY AND DONEGAL POINT



Key Characteristics

- Strong coastal influence, the coastline is open and windswept, with no trees or hedgerows.
- Forts and holy wells are scattered along the coast.
- Long distance views to higher grounds in the east.
- Network of telegraph poles prominent due to flat land.
- Walls built from beach shingle.
- Coosheen is widely known as a traditional Kelp village.

Typical Photograph: Coastal bay



Landscape Character types and habitat types

LCTs	HLTs	HLT codes	HT	HT codes
Coastal Plain and Dunes	Dunes	D	Marram dunes	CD2
	Coastal Intertidal	CI	Shingle and gravel shores	LS1
	Enclosed Land 2	EL2	Sea walls	CC1
	Enclosed Land 3	EL3		
	Rough Ground 2	RG2		

Seascape Character Area Extent

This SCA extends from Ballard Bay to George's Head and encompasses areas such as Donegal Point and Farihy Bay.

Geology and Landform

The area is underlain by Namurian sandstone and shale, with bedrock derived till the dominant geology. The coastline is composed of flat rocky headlands and bays with long broad beaches of bright yellow sand.

Coastal Ecology

Large dune systems with high dunes are very prominent within this seascape. These are largely covered with marram grass, as well as other specialised plant communities. A kelp forest is present along the beach at Farihy Bay.

Farrihy Lough is situated 5km north of Kilkee on the coast, this is a small brackish lake surrounded by a marshy floodplain. The site is an important bird habitat; complete freezing of the lake is prevented in winter due to the brackish nature of the lake, and therefore large numbers of wading birds and swans flock to the lake during harsh weather conditions.

Donegal Point and Farrihy Bay offer spectacular underwater marine flora and fauna, and archaeology (shipwreck,s i.e. the Quebec and the Fulmer) for marine and sub aqua enthusiasts.

Historic Seascapes and Human Influence

Unlike SCA6, the promontory forts in this area are rarely intervisible except for Donegal Point, which has clear views south to Castle Point and Illaunadoon. The cashel at Caherlean looks north to Mutton Island. In the 1800s Farrihy Bay played an important role in Clare's fishing industry.

Condition and Sensitivity

This seascape area is degraded in parts, particularly in areas susceptible to erosion, though the more isolated bays remain unspoilt. Coastal plain is vulnerable to change as it is open and changes will be highly visible.

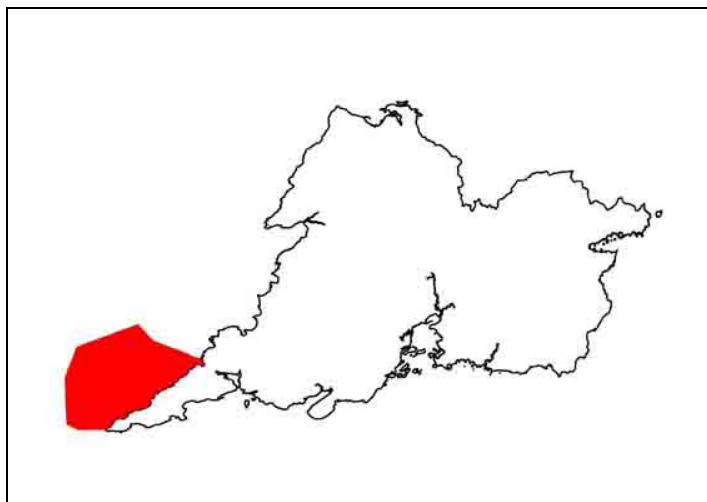
Forces for Change

-
- Visually sensitive coastal plain
 - Degradation of coastal plain by modern housing
 - Network of telegraph poles detractive due to the flat nature of the landscape
 - Open areas sensitive to change due to high visibility
 - Dune systems which are delicate ecological habitats and landscape features, and highly susceptible to change
-

Principles for Seascape management

-
- Protect views to open areas
 - Infrastructural developments including road widening along the coastline should consider local landscape character
 - Linear development along the coastline should be avoided and all other development should be screened appropriately
-

AREA 8: NORTH LOOP HEAD PENINSULA



Key Characteristics

- Coast becomes increasingly dramatic towards Loop Head with high vertical sea cliffs and stacks rising over 60 metres.
- A lighthouse is prominent on the headland.
- Extensive views to Kerry in south.
- Kilkee is a Blue Flag Beach and an established scuba diving site.
- Loop Head cycleway passes round the peninsula.
- Wind swept trees, scattered pebbles and boulders reflect the nature of the sea and prevailing westerly winds, which the landscape is exposed to.
- Fifteen shipwrecks are recorded in the waters off Kilkee.

Typical Photograph: Loop Head



Landscape Character types and habitat types

LCTs	HLTs	HLT codes	HT	HT codes
Peninsular Farmland	Coastal Intertidal	CI	Improved agricultural grassland	GA1
Coastal Plateau	Enclosed Land 3	EL3	Sea stacks and islets	CS2
	Enclosed Land 4	EL4	Sedimentary sea cliffs	CS3
	Rough Ground 2	RG2	Treelines	WL2
	Rough Ground 3	RG3	Blanket bog	PB2
			Exposed rocky shore	LR1

Seascape Character Area Extent

North Loop Head Peninsula extends from Loop Head at the most western tip of Clare to George's Head less than a Kilometre from Kilkee on the west coast of Clare.

Geology and Landform

The folding of the rocks into synclines has created spectacular coastal forms such as The Bridges of Ross and sweeping slabs near Castle Point. The peninsula is largely flat with distinctive long low ridges and hills close to the coastline, e.g. Moveen Hill.

Coastal Ecology

The cliffs support a large number of breeding seabirds with a nationally important colony of Guillemots and a regionally important colony of Kittiwakes. Interesting maritime flora is also present above the cliffs.

In addition moorland and blanket bogs are visible to the east of this SCA.

Illaunoneraun Island, situated 500m offshore, 7km south west of Kilkee, is recognised as an important seabird colony. Since 1975 there have been sightings of Cormorants, Great Black Backed Gulls, Fulmars and Barnacle Geese on the Island.

Historic Seascapes and Human Influence

The area has remained largely remote and unspoilt and has avoided being altered by extensive new development or changes in agriculture, except for holiday home and caravan park developments at Kilkee. Settlement is more prominent on the southern fringe of the peninsula (SCA 9).

Flat peninsular farmland is the main landscape type within this SCA, with distinctive ladder fields (EL3) and linear hills along the coast (Rough Ground 2 and 3 c 700m wide band behind cliffs).

Promontory forts are a noted feature of the coastline, but south of Castle Point they occur within enclosed bays and have limited coastal intervisibility. However, ringforts on the coastal hills are highly intervisible and the ability to see several forts from one, when they are visited, adds to their visual amenity and tourist potential.

Castle Point, however, has views along the coast north to Donegal Point. The twin island forts of Gull Island and Dermot and Grania's Rock add character to the tip of Loop Head and are in exposed positions.

Condition and sensitivity

The area is in good condition and is increasingly intact as one travels west away from Kilkee. Traditional settlement patterns and the distinctive ladder fields remain largely unaffected by modern development and agricultural change.

Large-scale development would be very evident due to the flat open nature of the area with expansive skies. Traditional small-scale housing development of scattered white painted cottages could be accommodated. The area would be particularly vulnerable to pressures such as windfarms, masts etc

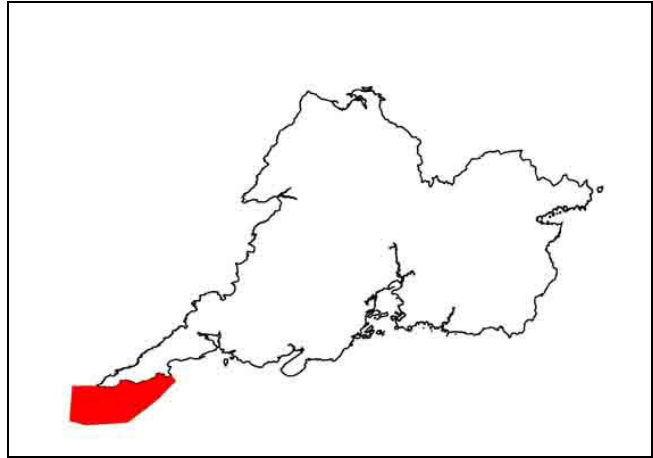
Forces for Change

-
- Expansion of Kilkee, i.e. new tourist and housing facilities
 - Insensitive housing development or sporadic housing along the peninsular
 - Windfarm, communication masts or any other form of vertical development
 - Damage to natural vegetation particularly above the cliffs due to agricultural intensification
 - Climatic change and coastal inundation
 - Upgrading of roads
 - Visual impacts of pleasure crafts and fishing vessels and potential sources of pollution (oil spills, wastewater) around Kilkee
-

Principles for Seascape Management

-
- Careful planning and siting of new tourism facilities is needed to maintain the integrity of the largely unspoilt seascape
 - Careful screening, siting and design for any new developments particularly windfarms, is needed
 - Agricultural intensification should be controlled
 - Continuous monitoring of coastal waters to protect against pollution is warranted
 - Infrastructural developments including road widening along the coastline should consider local landscape character
-

AREA 9: SOUTH LOOP HEAD AND SHANNON MOUTH



Key Characteristics

- Direct views to land across water, i.e. Ballybunnion and Kilconly Point.
- Rinevella Bay is a sheltered sandy inlet.
- The area is largely unspoilt and remote with little evidence of holiday home development or caravan parks.
- Kilbaha pier is of regional architectural significance (20407102NIAH).
- This area marks the limit of the coastal intertidal zone.

Typical Photograph: Coastline South of Kilbaha



Landscape Character types and habitat types

LCTs	HLTs	HLT codes	HT	HT codes
Peninsular	Coastal Intertidal	CI	Improved agricultural grassland	GA1
Farmland	Enclosed Land 3	EL3	Sheltered rocky shores	LR3
	Enclosed land 4	EL4	Shingle and gravel shores	LS1
	Rough Ground 3	RG3	Sea Inlets and bays	MW2

Seascape Character Area Extent

The area extends from the southern tip of Loop Head to Kilcredaun Point at the mouth of the Shannon.

Geology and Landform

The southern area of the peninsula is largely flat with distinctive long low ridges and hills close to the coastline, e.g. Rehy Hill

Coastal Ecology

This LCA is largely composed of sheltered coastal farmland compared to the windswept and exposed farms of the North Loop Head Peninsula, but with many of the characteristic linear fields (EL3), which are also found along the north coast. Bridges of Ross (just North of Kilbaha on the road to Loop Head) offers spectacular cliff scenery for some of the best bird watching locations in Ireland. The area is also considered important for mackerel fishing.

Historic Seascapes and Human Influence

The area is served mainly by minor roads except for Kilbaha where a Class B road is present. Development is scattered but is more concentrated than on North Loop Head.

Loop Head is an isolated area of rough ground (RG3), part of the coastal ridge noted along the north coast. The nineteenth century lighthouses at Loop Head (20407101NIAH) and Ladder Rock (20407203NIAH) provide foci and viewpoints. The associated cottages at Loop Head preserve the remains of the c 1700 lighthouse. Despite navigational aids, forty wrecks are recorded between Loop Head and Carrigaholt.

Condition and Sensitivity

The area is in good condition as it remains largely unspoilt and remote.

Large-scale development would be very evident due to the flat open nature of the area with expansive skies. Developments would be visible from North Kerry (Ballybunnion). Traditional small-scale housing developments of scattered white painted cottages should be encouraged.

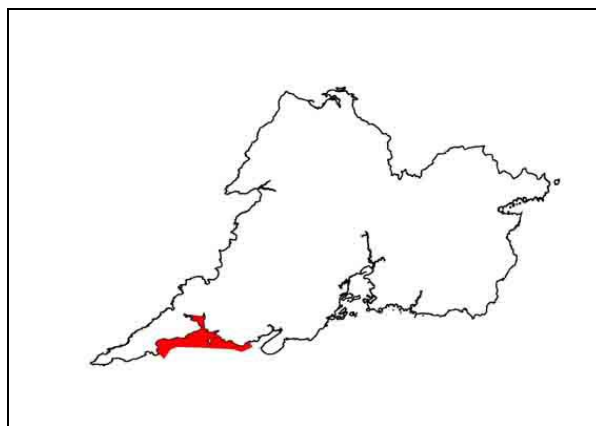
Forces for Change

-
- Insensitive housing development
 - Large scale barns and farm units
 - Agricultural change, intensification or abandonment
 - Removal of field boundaries affecting the integrity of ladder fields
 - Vertical development such as windfarms and masts, which would be particularly apparent
 - Dereliction of traditional cottages and population decline
 - Increased maricultural activities along the peninsula
 - Enhanced access to primary transportation and urban centres as illustrated in the West Clare Local Area Plan
-

Principles for Seascape Management

-
- Restore existing derelict structures and buildings
 - Careful screening, siting and design is important for any new developments or houses
 - Appropriate proactive planning policies need to be developed and implemented to protect sensitive areas
 - Implement regular monitoring of coastal waters particularly in areas where mariculture and tourism activities are prominent
 - Promote retention of field boundaries to maintain the integrity of both the seascape and landscape.
-

AREA 10: LOWER SHANNON



Key Characteristics

- The River Shannon in this area is wide, creating a greater coastal than estuarine sense.
- Views from Kilrush to Scattery Island and Hog Island.
- Settlement is concentrated around Kilrush including caravan parks and golf club.
- Pylons and Money Point Power Station are prominent features.
- Kilrush is a designated Heritage Town and Sea Angling Centre.
- Kilrush Marina is a major infrastructure providing 120 berths at all stages of the tide. It has been awarded Blue Flag status.
- Scattery Island is a designated ACA (Architectural Conservation Area).
- There are views across to Ballylongford and County Kerry.

Typical Photograph: Coastline East of Doonaha



Landscape Character types and habitat types

LCTs	HLTs	HLT codes	HT	HT codes
Flat Estuarine Farmland and Islands	Estuarine Intertidal	EI	Estuaries	MW4
	Devotional and Ritual	DR	Improved agricultural grassland	GA1
	Enclosed Land 2	EL2	Shingle and gravel shores	LS1
	Enclosed Land 3	EL3	Sand shores	LS2
	Enclosed Land 4	EL4		
	Settlement 2	S2		

Seascape Character Area Extent

The Lower Shannon SCA is situated between Kilcredaun Point and Lynchs Point (east of Money Point).

Geology and Landform

Long sand and shingle beaches with an exposed feel when winds are from the south west.

Coastal Ecology

The area is dominated by tracts of low lying estuarine fringe and farmland. Of particular interest in this SCA is the ecological diversity found on Scattery Island and Poulnasherry Bay.

Scattery Island consists of a diverse range of habitats including lagoons, saltmarsh, loughs and eroded sea cliffs on the western fringe. Over forty-one species of birds have been recorded on the Island.

Poulnasherry Bay is a designated SPA and consists of a wide stony estuary and is an important breeding area for Brent Geese

Carrigaholt and Kilcredaun are considered good bird watching sites. In addition, dolphin watching boat trips operate from Carrigaholt.

Historic Seascapes and Human Influences

Central to the Shannon's communications, are the series of small quays that punctuate the coastline (e.g. Cappagh pier, early nineteenth century ashlar construction - 20406732NIAH).

There are exposures of prehistoric peat and submerged forests of Neolithic Scots Pine (4960 ± 35 BP, 3892–3655 cal BC; GrN-20145, O'Sullivan 2001, 312-3) and a post-medieval boat (Poulnasherry Bay 2, *ibid*). The estuary was historically an important food producing area and is recorded as 'Oyster Hole' on the Pelham Grand Jury map of 1787.

Seventy wrecks are recorded off Kilrush and Tarbert, many of which must lie on the Clare side. There are small farm cottages dispersed throughout the landscape particularly around Doonaha.

There is a monastic complex, possibly from the sixth century, and medieval roundtowers and churches on Scattery Island. It remained a pilgrimage and burial site after the Elizabethan slighting of the monastery and the island's conversion to a defensive fort (its pattern – or penitential round – was suppressed in the early 1800s).



Defences dot the coastline, providing foci and viewpoints, such as the Tower House at Carrigaholt (illustrated) and Napoleonic period batteries at Kilcredaun Point and Doonaha.

Condition and Sensitivity

The condition of the seascape is moderate becoming poorer closer to the River Shannon SCA. Power stations and windfarms are dominant features degrading views across the water in County Kerry and Limerick. Changes would be evident due to low lying and exposed nature of the area.

Small scale, well sited development may be accommodated. Large-scale development however should be avoided.

Liaison with Kerry and Limerick County Council should be undertaken with reference to all proposed developments along their coastline.

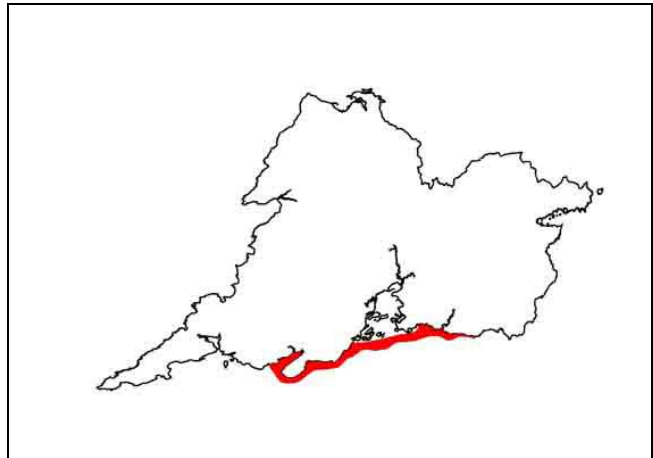
Forces for Change

-
- Shellfish and oyster cultivation at Carrigaholt Bay
 - Coastal development in prominent locations which would detract from the seascape value of the area e.g. power station, wind farms, marinas, etc within view on the Kerry and Limerick coastline
 - Insensitive housing development
 - Air and water pollution from Money Point and power station at Tarbert
 - Caravan development at Corlis Point and Kilrush
 - Dereliction of traditional cottages and population decline
 - Agricultural change, intensification or abandonment
-

Principles for Seascape Management

-
- Linear urban development should be avoided and all other development should be screened appropriately
 - Views to the coastline of Limerick and Kerry should be retained
 - Implement regular monitoring of coastal waters particularly in areas where tourism activities are prominent
 - Appropriate proactive planning policies need to be developed and implemented to protect sensitive areas
 - Strict control over siting of new caravan parks and expansion of existing facilities is warranted
 - Promote agricultural and environmental schemes to avoid dereliction of coastal based landscapes
-

AREA 11: RIVER SHANNON



Key Characteristics

- Coastal fringe is flatter and slopes down towards the sea.
- Views to scattered farm house settlements.
- Deep water berthing facilities.
- Views of shipping, commercial, industrial activity, pasture land and forestry.
- Focal point for travelling the waterways of Ireland.
- Shannon Airport is a landmark transport node of transcontinental significance (also, Fergus Estuary Seascape Area below).
- Car ferry service to Tarbert along the north coast of County Kerry.

Typical Photograph: Industrial Development along the River Shannon



Landscape Character types and habitat types

LCTs	HLTs	HLT codes	HT	HT codes
Flat Estuarine Farmlands and Islands	Estuarine Intertidal	EI	Improved agricultural grassland.	GA1
	Enclosed Land 4	EL4	Muddy sand shores	LS3
	Airports	A	Estuaries	MW4
	Designed Landscape	DL		
	Devotional and Ritual	DR		
	Rough Ground 2	RG2		

Seascape Character Area Extent

The River Shannon SCA extends from Limerick to east of Money Point. It is bounded by Kerry Head to the South and Kilrush farmlands to the North.

Geology and Landform

The River Shannon SCA consists of a shallow low-lying and muddy linear coastline. This area is composed of a prominently ridged landscape, with linear hills aligned south-west to north-east. The coastal fringe is flatter and slopes towards the Shannon. It also becomes increasingly flatter towards Kilrush.

Coastal Ecology

The River Shannon offers a zone of passage for migratory fish species including salmon and eel. Other fish species found in the river include shellfish, pollack, conger, thornback, bullhuss, tope, three bearded rocking, dogfish and bass.

Clonderlaw Bay, west of Labasheeda, is a designated SPA with important intertidal mudflats, which provide winter fowl and waders, feeding areas and preserves post-medieval fish traps and a watermill paddle (O'Sullivan 2001, 311-2).

Derrygeeha Lough is situated 2km from Clonderlaw Bay. The main interest of the site is entomological as it is only one of two stations for the caddis fly (*Cyrrus insolutus*) in Ireland.

A resident population of bottlenose dolphins (*Tursiops truncates*) are often visible along the River Shannon. The River is also of high botanical value and records of the very rare rush, the Triangular Clubrush (*Schoenoplectus triquetter*), have been documented.

Historic Seascapes and Human Influences

The River Shannon SCA is part of the largest deep water estuarine complex in Ireland. Over 750 vessels enter the estuary annually and range from small coasters to vessels of up to 180,000 DWT. The farmland within one mile of the estuary is mostly large straight-sided fields (ELA, including drained *corccass* watermeadow). It was improved from the seventeenth century onwards through the plantation and settlement of a skilled and compliant population. It is associated with designed landscapes at Cahiracon, Kilmore and elsewhere.

Sixteenth century, ruined castellated tower houses dot the shore, providing viewpoints and reference points (e.g. Mountshannon Point, Castle Donnel and Cratloekeel, Colmanstown Castle and Point) and the Napoleonic war battery at Kilkerrin is of national architectural significance (20406805NIAH).

Saint's Island may indicate a continued reverence of a place: whether historically justified or not, it respects a common interpretation of the landscape as ritual or devotional in character.

Meelick Rocks, in the upper estuary intertidal zone, has an exposure of Mesolithic peat (6240 ± 25 BP, 5299–5078 cal BC; GrN21929) and Neolithic tree-stumps (4160 ± 20 BP, 2875–2634 cal. BC; GrN-21930). A polished stone schist axe (NMI 95E0228:3) indicates prehistoric trade or transport of prestige goods from Connemara, or further, and possibly a ritual deposition.

Condition and Sensitivity

The estuary is in moderate to good condition. However, industrial and commercial activity dominates the view from land to sea.

Low lying, flat and open views to sea increase the area's sensitivity to change particularly from shipping and industrial activities.

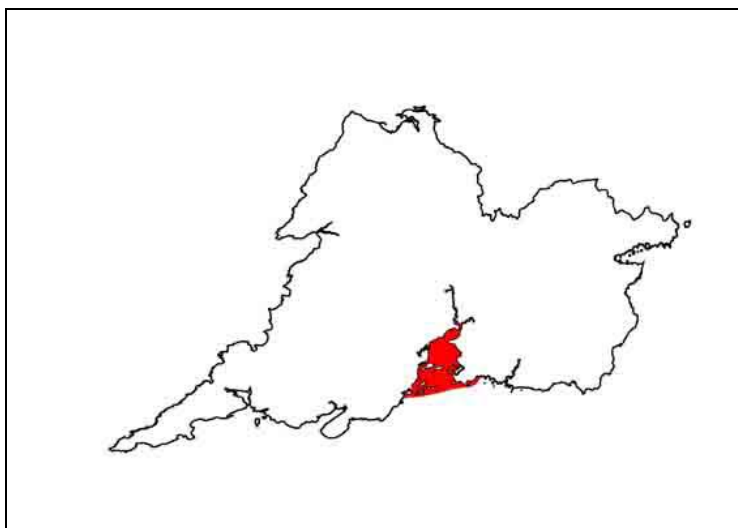
Forces for Change

-
- Visible impacts of shipping and commercial activity
 - Plantations of coniferous forestry
 - Insensitive housing development
 - Impacts upon water quality due to drainage from the settlements, farmland and industry (bauxite refinery at Aughinish)
 - Effects of Municipal outfalls from activities in and around Limerick City, Shannon Airport and other urban settlements, increased urban expansion leading to faster run off, a steepened flood 'profile', and scouring erosion of mudflats
 - Excess nutrients draining into the River Shannon from Lough Derg
-

Principles for Seascape Management

-
- Implement regular monitoring of coastal waters particularly discharges from Limerick City and industries in the area
 - Best practice forestry guidelines should be adhered to in order to avoid inappropriately siting or design of plantations
 - Infrastructural developments including road widening along the coastline should consider local landscape character
 - Linear development along the coastline should be avoided and all other development should be screened appropriately.
-

AREA 12: FERGUS ESTUARY



Key Characteristics

- The Fergus Estuary is a designated SPA.
- Influence of the sea is apparent although sea defence banks prevent views to estuary in some areas.
- Impacts upon the estuary due to climatic change, sea level rise, increasing storms etc.
- Open expansive views across the estuary to the river Shannon.
- Estuary side factories are a detractor, e.g. Clarecastle Test Centre.
- Views to Deer Island, Coney Island, Feenish and Deenish Island.

Typical Photograph: The Fergus Estuary and Hinterland



Landscape Character types and habitat types

LCTs	HLTs	HLT codes	HT	HT codes
Flat Estuarine Farmlands and Islands	Estuarine Intertidal	EI	Improved agricultural grassland.	GA1
	Devotional and Ritual	DR	Sea walls	CC1
	Enclosed Land 2	EL2	Estuaries	MW4
	Enclosed Land 4	EL4	Salt marsh	CM
	Designed Landscape	DL	Swamps	FS1
	Recreational	R	Wet grassland	GS4

Seascape Character Area Extent

Fergus estuary and estuarine land extending from Clarecastle in the north, along the estuary on both sides, to Shannon in the east and Killadysert in the west.

Geology and Landform

This low-lying distinctive estuarine landscape is underlain almost exclusively by a combination of limestone series. Limestone derived till deposits are found along the eastern shores of the estuary itself. The other predominant surface geology is composed of estuarine silts and clays. The low lying area is dominated by the Fergus River and its opening into a wide estuary with a number of islands.

Coastal Ecology

This area is designated as an SPA and SAC and therefore is of high ecological importance. The SCA contains extensive areas of intertidal mudflats with fringing reedbeds, swamps, salt marsh and wet marsh habitats.

The Fergus estuary is of international importance for wintering and migrating wildfowl and contains a number of rare botanical species. Land use is largely pasture estuarine farmland.

Historic Seascapes and Human Influence

Settlement is sparse, reflecting the areas past tendency to flood, with some settlement on higher ground. The west bank has mixed curvilinear and straight-bounded fields (EL2), but the east bank has the large straight-sided fields characteristic of land improved by drainage (EL4).

Fish traps and post-and-wattle revetments are found on the flats and creeks – dating from the Bronze Age ($2540. \pm 20$ BP; 797–551 cal. BC; GrN-209074, O’Sullivan 2001, 297) to post-medieval times (155 ± 25 BP, cal. AD 1665–1946; GrN-20141). A dug-out boat has been exposed in a saltmarsh creek near Clenagh (Kelly 1987, medieval or earlier) and many small craft probably lie buried in silted-up creeks.

Rineanna (Rinnanna) has designed landscapes as well as a historic golf course.

Today, Clarecastle is a busy bridging point, heavy traffic and recent development detracts from the historic character of the town. On the eastern boundary, there is increased settlement due to proximity to Shannon airport, and the town. Holy wells, churches (DR) and castles are scattered throughout the islands and help to enhance viewpoints within a broad vista.

Condition and Sensitivity

Overall the quality of the Fergus estuary is good. However, there is evidence of poorly sited small-scale developments. The estuary would be very sensitive to change. Development on the estuary shores would be highly visible due to the low-lying flat and confined nature of the estuary.

The rural and tranquil estuarine landscape of high ecological and landscape value could easily be affected by inappropriate development, pollution or climate change. Designed landscapes, following their demise as parklands of big houses, are preserved where they perform a second function (incorporated in research establishment grounds, for instance)

Forces for Change

-
- Potential for modern unsympathetic development that would be highly visible
 - Tidal surges and marine transgression due to climate change and sea level rise
 - Further degradation of hedgerows and choking of drainage ditches
 - Changes in field patterns due to intensification of agriculture, conversely the abandonment of agriculture
 - Road upgrades, natural gas pipeline
 - Pollution of estuarine water due to wastewater from towns, run off from agriculture etc
 - Scour erosion of flats following improved land drainage and urban development upstream
 - Shannon free zone and unsympathetic development highly visible
 - Potential reclamation plans
 - Increased leisure facilities, potential for marinas, more golf courses and hotels.
-

Principles for Seascape Management

-
- NHA and SAC designated areas should be determining factors in controlling landuse
 - Infrastructure and tourism developments including marinas and hotels along the coastline should consider local landscape character
 - Linear development along the coastline should be avoided and all other development should be screened appropriately
 - Stormwater sewer systems and field drains should use ponds, or semi-natural lagoons, to filter out 'non-point specific pollution' as well as slow down the flood response to rainfall
-

6.1

INTRODUCTION

The landscape, ecological and historical resources of Clare are in a process of continuous and ongoing change in response to the direct and indirect consequences of human activity and of natural processes. Throughout the county's history, changes in agriculture, industry, society and the environment have had a profound influence over the landscape. In many instances change was rapid, brought on by changes in political or administrative regimes, patterns of land ownership or fluctuations in population. The impact of the Congested Districts Board and Land Commission is evident throughout the rural landscapes of Clare. More recently, rural electrification and road improvements have brought further changes through the expansion of rural settlement, whilst government and EU assisted investment has altered both the scale and organisation of agricultural activity.

As part of the ongoing process of change, patterns of employment, agricultural land use, forestry and infrastructure all continue to transform the landscape. However, the implications and significance of change are always difficult to assess. Assessment and appreciation of landscape is often subjective and changes to landscape that are regarded as negative by some, may be perceived as positive by others. Perceptions also change with time and new features may become established as valued elements of the landscape. However, it is vital that change is managed to retain or enhance the qualities that make the Clare landscape special and conserve the great variety of historical, cultural and ecological resources found within the county.

At a strategic level, County Clare is part of the Southern and Eastern Region of Ireland, which has been awarded Objective One Status, thereby qualifying for higher levels of grant assistance from the European Union (EU) up to the end of 2005. Investment is available for local infrastructure, local enterprise development, agriculture, rural development and social inclusion. The aims of the Operational Programme highlight some of the broad trends and issues facing the environment and heritage of the region. These include arresting the deterioration of river and lake water quality, the protection of the countryside, urban areas, environmentally sensitive areas and the strategic management of land use.¹

This section of the report examines in more detail the most influential driving forces behind landscape change in County Clare, setting change in a long term context and analysing trends for the future. It is based upon a desk review of

¹ Operational Programme for the Southern and Eastern Region 2000-2006. Southern and Eastern Regional Assembly 2000

relevant planning and policy documents, general literature and upon consultation with local authorities, agencies and interest groups. This section includes broad guidance for each of the principal forces for change, suggesting how change can be managed to ensure it has a positive, sustainable influence on landscape character.

6.2 *AGRICULTURAL CHANGE*

A key issue that emerged during the public consultation programme was that of agricultural change, and particularly those changes that are associated with the decline in importance of the agricultural sector in the social and economic life of the county.

Whilst the profound influence that agricultural regimes have had on the landscape of the county is widely acknowledged, debate is currently lacking at national or indeed regional level on the likely consequences of agricultural decline.

At present, Clare remains a heavily agricultural county with the relative value of agriculture, forestry and fishing to the county almost double that of the Midwest region and Ireland as a whole (Gross Value Added figure). Figures for 2001 estimate agriculture as being worth approximately €127m to the Clare economy in 2002.

County Clare has a total area of 318,784 hectares with 203,450 of this suitable for agriculture (Clare County Development Plan, 1999). The number of farms in County Clare in 1995 was 7,572. Half the farms in Clare are less than 20 hectares in size, while only 17 per cent are over 40 hectares (Integrated Strategy for the Social, Economic and Cultural Development of County Clare, 2002). There are 3,750 full time and 3,750 part time farmers within the county; of these the majority own cattle, followed by farmers with sheep, horses, tillage, organic and other horticultural areas (Clare County Development Board (CDB, 2002).

There is a long tradition of horse breeding within the County as evidenced in the numerous horse shows. Tillage was traditional in parts of the County, however over the past thirty years, this practice has declined due to increasing machinery costs and has been replaced by cattle rearing and dairy farming. There has been a move towards part time farming in recent years, where half the farmers in Clare are operating farms between 20 and 50 hectares with cattle enterprises predominating (Clare CDB 2002).

Fragmentation of holdings is considered a problem and the EU lists the entire county as disadvantaged, with over 90 per cent classified as severely handicapped. Sport horse production is traditional on Clare farms, with nearly 1,000 farms rearing horses (Clare CDB 2002). Farm forestry is a growing industry in County Clare, with over 1,172 hectares of forestry run by part time or full time farmers in 2000.

While two thirds of the land is usable for agricultural purposes, the National Soil Survey classifies only 29 per cent as being 'good' for grassland (Teagasc, 2000); 7 per cent are moderate and 35 per cent are poor to very poor. Meanwhile 24 per cent of the soils are good to very good for tillage, 8 per cent are moderate and 38 per cent are poor to very poor. Of the remainder, 20 per cent are peats and 9 per cent are variable in their suitability for tillage or for grassland (The Agricultural Institute 1971).

In Ireland, one of the most significant factors influencing the nature of the Irish countryside is the Common Agricultural Policy (CAP). The CAP was introduced to Ireland in 1973 with its focus on increased agricultural production, the result was production surpluses in certain sectors. In 1992, a significant reform to the CAP occurred in an attempt to reduce these surpluses. These measures included lowering guaranteed prices for key products and offsetting the impact of these cuts on producer incomes by means of direct payments. From a heritage perspective, these reforms were significant in that agri-environmental practices became an integral element, as a compulsory measure, of CAP for the first time under Regulation 2078/02. This resulted in the introduction of REPS in Ireland in 1994.

To date, in County Clare there have been 2,279 participants in the Rural Environment Protection Scheme (REPS) involving 82,354 hectares of land. The objectives of REPS are (Finn and Culleton, 2002):

- to establish farming practices and production methods which reflect the increasing concern for conservation, landscape protection and wider environmental problems;
- to protect wildlife habitats and endangered species of flora and fauna; and
- to produce quality food in an extensive and environmentally friendly manner.

In short, the scheme is designed to reward farmers for carrying out their farming activities in an environmentally friendly and traditional manner, in order to preserve the cultural and semi-natural landscape of County Clare. Other EU initiatives operating in the county include a scheme whereby landholders are compensated for leaving their land fallow for a period of time.

Additional, and in some cases stricter, conditions apply to certain areas of the Burren NHAs than the requirements of the basic REPS; for example separate management requirements apply to the high and low Burren areas.

In the Burren an average of 75 per cent of family income comes from farming. REPS supplies 33 per cent of the average family income. Farm size has increased by 9 per cent since 1991, while the number of farm holdings has fallen by 10.6 per cent since 1991 (Dunford, 2002). Between 1981 and 1991 3.65 per cent (1370 ha) of the entire Burren was reclaimed with some 70 per cent of

reclamation being intensive. Between May 1994 and early 1996, a further fifty-one sites (256 ha) were reclaimed. Of these sites, thirty-one were located within the Proposed Natural Heritage Area (NHA). Almost 3km of hedgerow and stone wall were also removed during this period. The direct effects of intensive land reclamation involve an irreversible change in soil structure and biodiversity.

The overuse of fertiliser has also had detrimental effects on wildlife and habitats due to the pollution of water sources and eutrophication (Lough Inchiquin). Silage effluent and septic tank overflow bacterial contamination were identified as the most widespread form of pollution in the Burren region, with up to 80 per cent of the water sources being bacterially contaminated. Research indicates that the number of silage clamps on the Burren increased ten-fold between 1980 and 1990 (Drew 1990). The EPA calculated that up to 50 per cent of the pollution of Irish waters can be attributed to agricultural sources (Lucey et al, 1999).

Significant landscape features such as stonewalls, hedgerows and field margins have been removed in order to facilitate bigger fields. Traditional agricultural practices need to be maintained throughout the county in order to preserve biodiversity. By maintaining the processes that created such species-rich habitats like the Burren, Irish farmers from the past to the present have largely determined, and will continue to preserve the biodiversity of the landscape.

In summary, given that much of the county is underlain by limestone, groundwater problems and nitrate pollution (as illustrated in relation to the Burren in the previous paragraphs) are likely to arise throughout the county. However, whilst intensification is a problem in parts of the county, declining farming activity is likely to have an equally problematic effect on the county's landscapes. With the increase in part-time farmers, there is an accompanying decline in farm families and limited labour to maintain and upkeep farm boundaries and buildings such as hedgerows, gates and stone sheds. All of these are an integral part of the rural fabric of the county. Moreover, with this decline, rush infestation and scrub encroachment is increasingly apparent in more marginal and wetter parts of the rural landscape.

Declining farming activity and viable modes of production to replace this activity are being addressed in certain programmes, such as the farm diversification schemes outlined in the Rural Development Programme. Guidelines have also been set out by the Forest Service to enhance forestry's role in agriculture (i.e. Forestry Biodiversity Guidelines). Coillte has implemented a five year landscape design strategy developed to meet the mandatory guidelines set out by the Forest Service (2000) and in order to meet the requirements of the FSC certification process.

Nonetheless, there is likely to be extensive landscape change over the next few decades due to the move away from agricultural production within the

county. Moreover, with the forthcoming decoupling regime of production and subsidies, further landscape change is increasingly likely and merits further investigation.

A summary of the key issues affecting agriculture is provided in *Table 6.2a*, whilst broad landscape guidance is provided in *Table 6.2b*.

Table 6.2a Summary of Key Agriculture Issues

- **Declining agricultural activity and its likely landscape impacts in terms of maintenance of agricultural features.**
- **The need to respect/maintain traditional features of the rural landscape which are the product, archaeologically, of human activities through history-hedgerows and woodlands being examples.**
- **The influence of European (CAP) and national (REPS) policies on promoting good farming practice and stewardship of the wider landscape and the changing structure of agricultural subsidies.**
- **The amalgamation of dairy farms and a general increase in farm size.**
- **The forthcoming decoupling regime.**
- **Neglect or removal of traditional farm buildings, stone walls and field boundaries.**
- **Ongoing loss of local wildlife habitats.**
- **Undergrazing leading to rush or scrub encroachment.**
- **Increasing farm mechanisation which has led to the removal of field boundaries and gate posts and can lead to a reduction of labour requirements.**
- **Overuse of fertiliser leading to an increase in the nutrient content of loughs, streams and wetlands in Clare leading to an increased risk of eutrophication.**
- **Modern large scale dairying operations and associated large sheds, which can be visually intrusive, especially when viewed from upland areas.**

Table 6.2b *Broad Landscape Guidance for Agriculture*

<p><i>Agriculture</i></p> <ul style="list-style-type: none">• Consider the historical dimension to the rural landscape and how patterns of woodland and hedgerows contribute significantly to this distinctive landscape.• All farms entering the REPS scheme should have a full heritage inventory carried out on their land.• Contrasting land management systems help maintain a diverse landscape character. Recognition and encouragement of traditional practices will help maintain the distinction between upland and lowland areas.• Site large farm sheds and outbuildings with regard to local visual amenity and consider views from surrounding uplands. Sheltered positions, choice of materials and native planting screens will help avoid unnecessary visual intrusion• Retention of unimproved pastures and management of herb rich meadows and wetlands will add diversity to the lowland agricultural landscape.• Maintain farm and field boundaries and wildlife habitats, and establish riparian zones to protect water bodies thus helping reduce environmental implications from intensively managed farms.• Correct stocking levels will avoid the problems associated with over and undergrazing and help maintain a diverse and well managed landscape.• Farm tracks can be visually intrusive on hillsides. Routing along screened alignments or along natural contours will help ameliorate impacts.• Management to maintain or re-establish, where appropriate, a strong field pattern of traditional stone walls or hedgerows will enhance the overall structure of the landscape and reduce its vulnerability to change and revive traditional rural skills and industries.• Enclosure of pockets within farmland encourages woodland growth and adds to diversity in the farmed landscape.
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- **The provision of buffer strips adjacent to watercourses and lakes may help to intercept diffuse pollution and enhance their ecological and landscape value. However, their width or effectiveness will depend on local soil types and rates of infiltration.**
- **Incentive payments should be provided to farmers who undertake positive measures on their farm, which will enhance the landscape type in which the farm is located.**
- **The clutter associated with smallholdings can detract from local landscape quality. Good house-keeping such as maintenance of outbuildings and removal of scrap and debris and repair of fences, will help maintain and enhance the landscape.**
- **Agri-environmental schemes that are based on sound policy and economic principles should be the driving force to entice and pay farmers to deliver a combination of environmental goods (Finn and Culleton, 2002).**

6.3

BUILT DEVELOPMENT

The most recent census data (2002) reveal an overall increase in the population of the county from 94,006 (1996) to 103,333, an overall increase of 9.9 per cent, above the Munster average of 6.5 per cent. Moreover, there was a significant increase in net migration to the County of 10.4 per cent between 1996-2002, a figure all the more significant when compared with the longer term pattern of population emigration of -6.3 per cent only ten years previously (1986-1991). However, whilst the overall population figures are positive, there are considerable spatial differentiations in the rate of population, with some areas suffering significant population decline.

Ironically, the areas of greatest population growth and development pressure often coincide closely with areas of high amenity value and high quality agricultural land. Thus, particular attention should be placed on balancing the conflicting demands within the areas of greatest development pressure. These growth areas include the Ennis/Shannon area, the western coastal area, the Lough Derg area and the south east of the county, in particular those areas bordering Limerick City.

According to the land registry, specific towns and villages experiencing high development pressures include Kilkee, Doolin, Lahinch, Ennis, Clarecastle, Sixmilebridge, Newmarket -on- Fergus, Shannon, Parteen, Cloonlara and O'Briensbridge. These correspond closely to areas of greatest population growth. On average, 880 houses were built annually in County Clare since 1990, an increase from 580 in previous years. In 1988, planning permission

was granted for over 633 developments, and this increased to 1368 in 1998 (789 dwellings, 238 commercial and industrial, 60 agricultural, 281 extensions).

The number of planning applications has however decreased in the last three years. In 2000 there were 2,729 planning applications, in 2001 there were up to 2,408 applications and November 2002 there were 2,081 planning applications for that year (McNamara pers. com. Clare County Council 2002).

A number of tax incentives are also currently operating within the county. The Urban Renewal Scheme is aimed at regenerating areas by providing tax incentives for residential developments. The aim is to combat the problems of decay and dereliction in inner core areas of towns and promote development that is balanced and sustainable. Towns to receive tax incentives under the Urban Renewal Scheme include Scarriff, Sixmilebridge, Kilrush, Ennistymon and Miltown Malbay. The scheme will also apply to commercial and industrial development once approved by the EU Commission.

Coastal Tax Incentives have led to increased developments in tourism resorts, for example Kilkee where tax schemes have resulted in over three holiday homes to every local home in the area. During the consultation process, it was argued by many that this scheme has backfired, largely because there is an over concentration of development in certain settlements which are unoccupied during the winter months. Further this increased development has resulted in environmental degradation of some of the most renowned beauty spots in Ireland.

The Clár Programme, a targeted investment programme in rural areas, was introduced in October 2001. The function of the programme is to provide funding to areas which have suffered from population decline between 1926 and 1996. Each area would have to have a minimum population of 4,000 people and a maximum population of less than 30,000 people. West Clare and parts of Northeast Clare are two of the sixteen regions to be targeted by the Clár Programme.

6.3.1 *Expansion of Existing Settlements*

These changes have effects on the county's landscapes. County Clare displays distinct patterns of rural settlement with numerous individual houses and buildings dispersed throughout the countryside. Small towns and villages, often with ancient origins, are also numerous and provide a focus for rural populations, services, recreation and community facilities. In recent years, built development has occurred on the fringes of towns and villages and in a scattered pattern along rural roads throughout Clare. In the future, it seems likely that development will continue to target these areas, meaning that particular care and attention to issues of siting, layout and design will be critical.

Unfortunately, new structures tend to be built to a standard design and tend to be unrelated to local patterns of built form. For example, new housing of

the same modern design, layout, materials and detailing may be observed in a number of towns, often sited along busy roads. Where new development is sited on the edge of towns and villages, or as ribbon development along principal approach roads, it has the effect of isolating the core of the settlement from its landscape context, restricting views to the open countryside and creating a nondescript first impression.

Expansion of existing settlements usually involves the development of greenfield sites and therefore the loss of a proportion of the region's landscape resource. Such development represents a significant and potentially detrimental force for change in landscapes which are sensitive in visual terms or which are important for their inherent historic or ecological interest. A more sustainable approach to meeting demand for housing and commercial enterprises would be to use redundant buildings or brownfield sites within the existing urban fabric.

6.3.2 *Isolated Buildings in the Countryside*

Derelict buildings are particularly prevalent in areas of marginal farmland, on the fringes of the upland moors, where they lend a sense of abandonment. In these locations, derelict farms and cottages, although crumbling and overgrown, represent an important and tangible link to the past and are evocative features in the landscape.

In lowland areas, many older properties are being abandoned. The principal reason is that older housing stock is difficult to renovate and convert to provide modern facilities. The constant demand for new housing is driven by the prestige of owning a new home and the need for new houses to enable younger generations to remain close to their parental homes. There is a strong sense of pride in the new, and perhaps a tendency to undervalue the traditional vernacular buildings. Scenic, coastal and some loughside areas are also under a great deal of pressure, both for residential development and second homes.

The development of new isolated houses and large modern farm buildings has had a cumulative negative impact on the quality and character of the countryside. Recent development has tended to introduce a profusion of incongruous materials and different styles. Indeed the use of modern materials has enabled more exposed and prominent locations to be built on whereas in the past sites were carefully chosen to exploit the shelter provided by landform or vegetation. Many new houses front directly onto rural roads and may have prominent entrance gates and ornamental gardens that do not integrate with the local landscape. These factors mean that new rural housing is often strongly at odds with older forms of rural settlement, which are often built of local stone, simply whitewashed and usually associated with groups of mature trees in a sheltered location which appears in harmony with the local topography.

Hence the issue of one-off housing in the countryside is highly contentious in County Clare. While many welcome strict controls, others point out that strict controls can be detrimental to the landscape. This is because they may lead to further rural depopulation and abandonment of farm holdings, as well as adverse impacts from uncharacteristic 'cluster' housing in the county's smaller town and villages.

Although new developments may have a detrimental landscape impact, they can also offer a positive opportunity to enhance the appearance of the area by the adoption of careful and considered design and choice of materials, which reflect the positive characteristics of the locality. '*County Clare House Design Guide, Houses in the Countryside*' produced by the county council considers traditional siting and design of houses with the objective of providing appropriate future development.

The development of foreign style bungalows in rural areas, whose materials, disproportionate windows and low pitched roofs are alien to the landscape, is also raising new concerns within the County. It is advised that new developments be based on the single storey traditional farm buildings.

6.3.3 *Commercial/Industrial*

Baseline information suggests that some 30-35,000 sq metres of industrial and commercial floor space will be required each year in County Clare (Integrated Strategy for Social, Economic and Cultural Development, 2002-2012).

Industrial development is concentrated around the Shannon. As of December 2000, 78 per cent of Shannon Development supported employment was in the Shannon area. Currently there are over 130 companies employing over 8,000 people on 600ha of developed land including the Free Zone, East Park and Smithstown Service Centre. There is provision on existing land banks to accommodate a further 100,000sq.m of office/ data centre type space, which is currently in the planning process. The greater Shannon area will also continue to be developed as a world-class centre for foreign direct investment (FDI).

Plans are currently underway for a new technology park in Ennis that will have the capacity to employ over 2,500 people. In addition there are also plans for a new industrial reserve north of Shannon and a strategic centre for enterprise development east of Shannon. .

A summary of the key issues associated with built development is provided in *Table 6.3a*, whilst broad guidance is provided in *Table 6.3b*.

Table 6.3 a Summary of Key Issues for Built Development

- **Standardised development on the fringes of existing settlements which compromises their distinctive landscape character and setting.**
- **The proliferation of scattered new housing in the open countryside, resulting in loss of quality and character of rural landscapes including loss of hedgerows.**
- **Dereliction and decline in the stock of traditional rural buildings.**
- **The introduction of a profuse variety of building materials and styles and the lack of reference to traditional rural buildings as models for siting and design, i.e. bungalow style houses.**
- **The expansion of industrial development on the fringes of settlements and along major communication routes.**

Table 6.3b Broad Landscape Guidance for Built Development

Materials and Colour

- **Limit the range of materials and colours used on any one building and use natural materials, such as timber, stone and slate to link with existing buildings.**
- **Select cladding materials and colours for modern industrial and farming buildings to minimise their impact in the countryside. Avoid the use of light colours, which can reflect the light, and intense greens or blues, which often clash with the surrounding natural tones of fields and woods. The treatment of roofs is particularly important when considering the visual impact these have on views to lowland areas from surrounding hills.**
- **Ensure that the materials and colours used are in harmony with one another and with existing buildings nearby.**

Design

- Use the scale, spacing, orientation and siting of traditional settlement form/ layout as a model for considering how new development can be fitted into the landscape without disrupting traditional patterns.
- Respect existing field boundary patterns and ensure that fencing, hedgerows, walls and lighting along property boundaries are suitably delineated, particularly in rural locations, where they should merge naturally with adjoining fields and woodland.
- Minimise disturbance to the local landform and design earthworks to integrate buildings with local landform: Avoid the use of substantial retaining walls or under-building on sloping sites.
- Consider the location and scale of outbuildings, driveways and areas of hardstanding, ensuring they are not dominant in views from the road and use traditional layouts as a model for new development.
- Retain as many existing trees as possible and plant native trees to screen and accommodate new development.
- Ensure that the conservation value and scenic quality of watercourses is not reduced, particularly in minor streams. New developments should be designed to benefit the visual focus and amenity value which water provides.
- Use buildings, styles, forms and architectural details that are characteristic of the local landscape. Most contribute to simple and distinctive local styles.
- Promote and encourage the use of publications such as 'County Clare House Design Guide, Houses in the Countryside' to guide the design process within the county.

6.4

INFRASTRUCTURE

6.4.1

Transportation

Roads are the most widely used form of transport in County Clare and patterns of built development display a strong relationship with communication routes throughout the county. Despite the increased emphasis on reducing dependence on the car, future economic growth is likely to generate increasing levels of car ownership. This has already been a factor in the proliferation of new housing in relatively isolated rural areas.

The existing railway line crossing Clare, connecting Limerick and Galway only operates services on the Ennis -Limerick section of the line.

The local road network in particular displays strong patterns in its routing and design, which should be maintained and reflected in the design of new routes and maintenance schemes. Unfortunately, road development can and has often had a significant impact on landscape character. It may fragment the countryside, destroy valued landscape and habitat features and generate further development. Much large-scale development is out of character in small-scale rural landscapes.

While the road network is the most dominant form of transport in the county, Clare has only 1.3 per cent of its road network defined as national primary route. It is the county council's policy to improve all roads in the county through general maintenance or even upgrading where traffic flows increase. The council also intends to extend and improve road access to areas of high visual and recreational amenity, and to provide car parks and scenic viewing areas.

Great care is needed if this is not to adversely affect habitat features and landscape character. The cumulative impact of minor road improvements may gradually erode the distinctive local identity of rural landscapes. For example, the straightening of sections of road and the introduction of kerbs, road signage and lighting tends to 'urbanise' the rural landscape. Care is therefore needed in the design of road improvements, which should also pay particular attention to the conservation of attractive local roadside features such as hedgerows and stone walls, which may be vulnerable to insensitive improvements. The numerous stone bridges in the county are also considered to be under significant pressure from increased traffic, and due care should be taken to maintain and conserve these distinctive features.

The Shannon estuary serves as one of Ireland's premier ports. Its deep water and sheltered location and flat land make the Shannon estuary a potential international centre for maritime industrial development. The main port facilities are Kilrush Harbour, the marine terminals of Money Point and Tarbert Power stations, Foynes Island Oil Terminal, Foynes Harbour, Aughinish Marine Terminal, Shannon Airport Oil Jetty and Limerick Docks where vessels up to 200,000 dwt can be accommodated. To date the estuary and the River Shannon have not reached their full potential in relation to environmentally sensitive tourism and development. An Integrated Coastal Zone Management Strategy is currently planned for the area and will need to be taken into account in future policies and proposals for the development of Shannon and its environs.

More recently, The National Spatial Strategy (NSS), a twenty year planning framework designed to deliver more balanced social, economic and physical development and population growth between regions, has identified Limerick/Shannon as a Gateway¹. The NSS has also identified Ennis as

¹ Gateways are urban centres with a strategic location relative to their surrounding areas, providing national scale social and economic infrastructure and support services.

strategically located, medium sized 'Development Hubs'. Hubs will support and be supported by the Gateways and will link out to wider rural areas.

The NSS has called for a number of key transport infrastructural changes that will influence County Clare, these include:

- Providing improved road and rail access between Dublin and Limerick (including consideration of a possible rail link to Shannon Airport), and improved access to the Shannon Estuary Ports.
- South and Eastern International Access - providing international access by sea and air for Gateways and Hubs and other areas along the western arc. This will involve increased utilisation of Shannon Airport, Cork Airport and the Shannon estuary through improved road and rail links between Limerick, Cork, Waterford and Rosslare.

6.4.2 *Overhead Transmission Lines, Telecommunication Masts and Pylons*

Overhead transmission lines are particularly prominent in open upland landscapes and along the stretches of the coastline and estuaries. There is a linear run of large transmission lines from north of Ennis towards Moneypoint and these interrupt the rural landscape considerably. On a smaller scale they may also be visually intrusive where they appear on the skyline as they cross ridges and drumlins.

Single, high communication masts or towers are a prominent feature of the upland summit of Maghera and detract from landscapes that can be considered remote and wild. Several masts are also evident on Woodcock Hill in the Broadford hills and this again detracts from the remote upland character, through provision of access roads and associated buildings. They are also highly visible from the lower slopes.

Bord Gais is currently constructing a new gas pipeline to the west of Ireland from Ballough, County Dublin to Goatsland, County Limerick taking in Counties Galway, Clare, Meath, Westmeath, Offaly and Roscommon. This new pipeline will open up additional areas for the supply of gas and provide a vital supply line throughout the west of Ireland.

6.4.3 *Renewable Energy*

In the 1970s, there was a revived interest in wind-generated energy due to the increase in oil prices. As a whole, Ireland was ranked fourth out of the then nine EC member states in terms of its wind energy potential. In 1994 the Alternative Energy Requirement (AER) was set up by the government to encourage development of alternative energy sources in an attempt to limit greenhouse gas emissions. Attention has therefore returned to the development of wind farms and there is mounting pressure for such development in Clare.

Future planning for wind farms needs to consider not only the environmental impacts of each development, but also the cumulative impacts on the landscape. There is particular concern over the potential impact on upland (Sliabh Aughty and Sliabh Callan) and scenic areas, which are favourable locations for wind farm development. These areas are targeted because the average wind speeds are higher compared to lowland situations. Wind farm developments are generally accompanied by a considerable road infrastructure, needed to service the turbines, which has an impact on the remote character of the uplands, making it a more accessible area.

Of further concern is the damage to peat lands: wind farms have been shown to facilitate erosion due to hydrological and physical disturbance of the peat and a general disturbance of associated habitats. Although the noise generated by wind farms is also considered to be an environmental impact, this is only a problem at close range. Other environmental factors to consider include the overall scale and character of the local landscape, its relative remoteness, the character of local skylines, the degree of enclosure provided by topography or vegetation and site specific factors such as distinctive landscape features. Nature conservation designations should also be considered, as they can be a constraint against wind farm development and will be subject to close scrutiny. Developments should also conform with the EU Birds Directive (No 409/79/EEC) to avoid significant disturbance to birds. Also of particular importance to Clare is that proposed developments should have regard to air traffic safety requirements.

A summary of the key issues associated with infrastructure development is provided in *Table 6.4a*, whilst broad guidance is provided in *Table 6.4b*.

Table 6.4a **Summary of Key Infrastructure Issues**

- **Ongoing, piecemeal road improvements, such as widening and straightening, development of new access and bypass links and the use of excessive lighting, signage and white lines, which together have a cumulative impact on visual amenity and landscape character.**
- **Increased traffic levels, heavy lorries and farm machinery on narrow rural roads, leading to the erosion of verges and characteristic roadside features.**
- **Loss of hedgerows and trees due to junction improvements.**
- **Standardising influence of road landscapes on local landscape character.**
- **Additional electricity pylons, overhead lines and communication masts.**
- **Pressures for wind farm developments in upland parts of the County.**
- **Marine and environmental implications of the gas pipeline.**

Table 6.4b Broad Landscape Guidance for Infrastructure Developments

Linear Development

- **Avoid developing infrastructure in remote areas with a wild character.**
- **Align routes to follow contours and respect local patterns of communication. As far as possible, keep routes to lower elevations and follow natural breaks of slope, avoid straight lines and angles that conflict with the grain of the land.**
- **Consider undergrounding transmission lines for short distances to avoid breaking the skyline in sensitive locations.**
- **Design infrastructure developments to minimise the risk of water pollution from run-off.**
- **Develop opportunities to enhance the landscape and wildlife quality of disused railway lines, roads and canals. Design new planting as an integral part of all infrastructure development, aiming to reinforce local landscape character and create a seamless fit with the surrounding landscape.**
- **Avoid creating a linear corridor of planting which would draw attention to infrastructure developments.**
- **Give special consideration to the design of local landscape associated with roads at the entrance to settlements, using traditional hedgerows and tree planting to enhance the 'gateway' effect.**
- **Use materials characteristic of the area, i.e. local stone for walls and native species for new planting.**

Wind Farm Developments

- **Remote landscapes and those which have been little affected by human intervention will have a limited capacity to accommodate wind farms and will be sensitive to cumulative impacts, while more accessible landscapes where human influence is already prominent will be less sensitive.**
- **Open skylines, on which the wind farm might appear in silhouette, will be particularly vulnerable, while undulating, wooded skylines could accommodate wind farm development more easily.**
- **Wind farm development may represent a bold statement in a large scale landscape. However, in small scale landscapes it may either detract from or be absorbed within existing landscape patterns depending on specific local circumstances.**
- **The degree of enclosure (by topography or vegetation) will be an important factor. Open landscapes will have wide visibility, whereas the visibility of relatively enclosed landscapes will be restricted.**
- **Site-specific factors such as the presence of distinctive landscape features, monuments, buildings and semi-natural habitats will be important considerations.**
- **The scale of the wind farm development is important. Large scale landscapes are more able to visually accommodate large numbers of turbines.**
- **Consideration should be given to the design, size, colour, siting and layout of turbines and the effect transmission lines and infrastructure improvements would have on the landscape. It is good practice to ensure that masts and turbines are constructed from matt, non-reflective materials.**
- **The cumulative impacts of wind farm developments should be considered. Once a wind farm is constructed, the capacity of the landscape to accommodate further wind farm development is significantly reduced.**

Communication Masts

- **Much of the guidance put forward for wind farms will also be of relevance to communication masts. The use of existing structures to support aerials and the amalgamation of several transmitters onto one mast minimises the need for visually intrusive structures.**
- **The full application of current guidelines in relation to communication mast siting is recommended.**

6.5 FORESTRY AND WOODLAND

6.5.1 Forestry

To sustain a competitive timber processing industry, the Republic of Ireland plans to double the current area of trees from the 8 per cent coverage recorded in 1999 to 17 per cent coverage by the year 2030. The increase in forestry will doubtless bring changes to the character of the landscape. This section examines the changing pattern of woodland cover in County Clare, from the localised pockets of semi-natural woodland to estate and farm woodlands and commercial forestry.

Total forest cover in County Clare at the end of 2001 was 45,262.93 hectares representing just over 14 per cent of the total land area in the county, which is well above the national average of 9.7 per cent. Forest cover in County Clare is almost evenly divided between private and public ownership, where 21,955.16 hectares of the forested land is owned by private growers and 23,307.76 hectares of forested land is owned by public foresters.

Forest cover in the county has almost doubled since 1992, two thirds of which was carried out by private growers.

Broadleaf afforestation in County Clare in 2001 was 126.57 ha (8.4 per cent) while conifer planting amounted to 1377.02 ha (91.6 per cent). Currently 20 per cent of planting in the county is broadleaved with a target set to rise to 30 per cent by 2006. Clare is the sixth most afforested county in Ireland (The Forest Service 2002).

Afforestation in County Clare (The Forest Service, 2002)

Plantation type	1998	1999	2000	2001
Broadleaf	144 ha	85 ha	111 ha	127 ha
Conifer	736 ha	847 ha	1,356 ha	1,377 ha
Total afforestation	880 ha	932 ha	1,467 ha	1,504 ha

6.5.2 *Semi-Natural and Estate Woodlands*

The original natural woodland, which colonised Ireland after the last ice age, has now largely disappeared. Over the last 6,000 years farmers have gradually removed it to provide land for settlement, cultivation and grazing. Scattered woodlands remain in relatively inaccessible places such as on the steep slopes of glens and areas of lowland moss.

The estates of the eighteenth century period contain some of the most significant areas of broadleaved woodland. They make an important contribution to landscape character, especially when viewed across loughs.

6.5.3 *Private Woodland*

Privately owned forest estates account for 21,995 hectares, while the public forests account for 23,308 hectares, most of which is owned by Coillte (The Irish Forestry Board). Private planters, most of whom are full time or part time farmers, carried out almost all planting in 2001. This was a direct result of ongoing government and EU funding through generous afforestation grants and annual forest premiums, which are payable up to twenty years after planting.

Private planting is common in the east Clare area and is relatively new, where significant tracts of land have only been planted in the last twenty years by Coillte and private owners. This part of the county is considered of significance in relation to the percentage of private forestry and continues to have good prospects for forestry expansion (Coillte 2000). A sizeable portion of the county is deemed suitable for forestry. National targets have been set to double the level of planting.

6.5.4 *Public*

The greatest concentration of Ireland's estate forests are in Tipperary (32 per cent) and Clare (25 per cent). Coillte, the semi-state forestry company has managed just over 22,000 hectares of land, but now plant on average, 150 hectares, all of which is through its Farm Partnership Scheme. Some 65 per cent of currently planted areas by Coillte is Sitka spruce, 30 per cent conifer diverse/lodgepole pine, with broad leaves (oak, beech, ash and sycamore) representing 5 per cent (Clare CDB, 2002).

Traditionally, large-scale commercial forestry has been sited on the uplands above limits of cultivation and on blanket bog. The visual dominance of geometric planting blocks on hillsides, and clear felling of land can have a significant negative impact on landscape character. However, there are strict regulations governing all felling. Felling licences are required under The Forestry Act 1946, governing inter alia, the felling of trees.

In the future, new afforestation may focus on marginal agricultural land on low lying poor drained soils such as those in the drumlins of Clare.

Potentially, vast areas of undulating landform could be covered with woodland, changing habitats and camouflaging ancient field boundaries and cultural landscapes. However, the implementation of strict biodiversity guidelines by the Forestry Service has aided in reducing such impacts. In recent times, the availability of better land (brown earths) at lower elevations has permitted foresters to broaden the range of species used by increasing the amount of diverse conifers through the introduction of native broadleaf species.

The Forestry Service is currently preparing an Indicative Forestry Strategy (IFS) for the County which primarily focuses on planting the right trees in the right places and will help guide the location and character of future afforestation. The IFS will set out the likely areas where further forests will be planted, those areas where particular care and close consultation with interested parties will be required and the special areas (i.e NHAs, SACs, SPAs) where it is unlikely that planting will ever take place. The IFS provides a framework for sustainable forestry management.

A summary of the key issues associated with forestry developments is provided in *Table 6.5b*, whilst broad guidance is provided in *Table 6.5c*.

Table 6.5b Summary of Key Issues for Forestry

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| <ul style="list-style-type: none">• The restructuring and forest design planning of existing commercial forestry plantations.• The development of (grant-aided) farm and amenity woodlands by farmers and other landowners for recreation as well as commercial benefit.• The increase of coniferous woodlands in accordance with government policy.• The promotion of state forests as a commercial and recreational resource. |
|--|

Table 6.5c *Broad Landscape Guidance for Forestry and Woodlands*

<i>Forestry and Woodland</i>
<ul style="list-style-type: none">• Conservation, restoration and management of semi-natural woodlands will maintain the diversity of landscape features and nature conservation interest; estate woodlands, including exotic species, can make an important contribution to local landscape character.• A diverse mix of species (appropriate to the site) including broadleaved species, adds to visual interest and reflects more natural woodland patterns. However, in a very simple landscape type a woodland with a more limited range of species may be accommodated more readily.• Irregularly shaped felling appears more natural in the landscape.• All plantation shapes should reflect natural landform.• Recognising and responding to the relationship between woodlands and open space is fundamental to landscape character. The overall proportion of woodland to open ground should not be too even and should, ideally, be about one third to two thirds, or vice versa, depending on the landscape character (The Design of Forest Landscape, Oliver W.R Lucas, Forestry Commission, 1991).• In more open landscapes the contrast of smaller woods tends to compete visually with natural features and woodland should, therefore, be blended strongly with the surroundings (The Design of Forest Landscapes, Oliver W.R Lucas, Forestry Commission, 1991).• Future forestry should be sympathetically planned and designed, in accordance with good practice and sustainable management (i.e. The Forestry Service's Forestry and Landscape Guidelines and Forestry Biodiversity Guidelines). It should also be appropriate in scale and not obscure the variations in landscape pattern that contribute to local landscape character.• Planting should be on good forestry land except where existing older plantations would benefit from the afforestation in terms of improving aesthetics in a forest design plan.• Consideration should be given to the implementation of urban forest initiatives such as the neighbour wood scheme throughout the county (Mc Aree, 2002).

Historically, tourism has been a major industry in County Clare and is currently one of the key sectors experiencing growth in the county. In 2000, approximately €81 million of revenue was generated in County Clare from overseas visitors, with North American tourists contributing over 37 per cent.

A breakdown of overseas visitors to County Clare is provided in Table 6.6a below.

Table 6.6a Breakdown of Overseas Visitors (2000)

Overseas visitors to County Clare					
County Clare	Total ('000s)	Britain	Europe	North America	Other
	615	131	197	251	36

Tourism promotion is largely led by Shannon Development. Northwest Clare's tourism industry is well developed with a long tradition of tourism in locations such as Lisdoonvarna, the Cliffs of Moher and the Burren.

Visitors to Clare are generally classified as:

- Casual tourists passing through the area, including Irish based coach tours on day visits, many of which will also visit the Cliffs of Moher and Bunratty Castle.
- Informed tourists pursuing an active interest in exploring aspects of the area; these may include continental based coach tours and visits usually last two to three days.
- Specialist and academic tourist (i.e. botanists and archaeologists); these visits may last up to a week where the tourist explores the more remote areas of the Burren or takes part in specific activities or excursions.

North Clare attracts the greatest proportion of tourists, where between 1990 and 1994 tourist numbers rose by 24 per cent to over 1.8 million. Within the area there are a number of attractions and facilities for visitors, including the landscape, unique ecology and archaeology. The main tourist attractions in north Clare include the Burren and the Cliffs of Moher.

The Burren area of north west Clare is renowned for its outstanding landscape and is the finest example of karstic terrain in Ireland. The Burren is also famous internationally, not only for its beautiful limestone landscape but also because of its remarkable flora and fauna and rich archaeological heritage.

The Cliffs of Moher are recognised as a major environmental and amenity area in north Clare. They attract over 500,000-600,000 visitors annually. They offer

magnificent panoramic views from the cliff walk and from the surrounding roads. The cliffs are also a Special Area of Conservation (SAC).

Tourism is considered one of the key economic drivers in south Clare, where Bunratty Castle and Folk Park, located on the main Ennis Limerick road, is the second highest paying attraction in the country, with 460,000 paying visitors per annum. Tourism in south Clare is strengthened by its proximity to the N18 and Shannon International Airport.

While west Clare is well endowed in terms of tourism resources, tourism remains relatively underdeveloped due to the remoteness and peripherality and to the strong competition from alternative tourism destinations particularly north Clare and Kerry.

The development of Doonbeg Golf Course is regarded as an opportunity for the local community to develop and promote their tourism product in order to encourage those visitors using the golf course to explore the surrounding landscape.

However, golf courses too can often be intrusive features in the landscape where their design introduces uncharacteristic features such as formal ornamental planting, mown amenity grassland or bunkers into an otherwise rural scene. The design and siting of golf courses, including associated facilities such as club houses, should be sympathetic to the character of the area.

There are a number of other areas of interest within the County such as parks and recreational sites that attract visitors on a regular basis. These include (but are not limited to) the following:

Spa town of Lisdoonvarna	Lough Bunny
Coole Park	Dysert O' Dea
Lough Derg	Craggaunowen
Mount Callan	Clare Abbey
Dromoland Castle	Scattery Island
Lahinch	Spanish Point
Kilkee	Aran Islands
Quin Abbey	Sliabh Bernagh
River Shannon	Fergus estuary
Rossbay	Loop Head Lighthouse
Ailiwee Caves	Doonbeg
Lough Graney	Coast Road: West Road
Broadford Gap	Sliabh Elva
Mountshannon	Fanore
Inis Cealtra	Black Head
Whitegate	Cragan's Wood
Bunratty Castle & Folk Park	

Tourism is dependent on the maintenance of the landscape resource as well as the nature conservation value and historic interest of the area. Amongst the county's attractions are the variety of landscapes and seascapes it offers; the wealth of outdoor activities including walking, cycling and horse-riding; and the range of rivers and loughs for angling and cruising. The obvious danger exists: if tourism development is permitted to erode the county's landscape character and diversity, the industry itself is likely to suffer as a result.

Hence, tourism should embrace concepts of sustainability and local identity. The distinctive unspoilt landscapes, countryside and villages are key assets to be conserved and enhanced. Low key sustainable approaches for the provision of tourism infrastructure should be adopted; and quality developments by the private sector encouraged, possibly through the use of design competitions.

The development of tourism should involve the co-operation of state organisations such as Shannon Development, the Department of Community, Rural and Gaeltacht Affairs, the Department of the Environment and Local Government, Clare County Council and local communities in an integrated way through the County Development Board.

There are a number of government funding initiatives in place throughout Clare to promote sustainable tourism; these include:

- The Clar Initiative attached to the National Development Plan 2000-2006.
- Investment in the marine leisure sector infrastructure as part of the National Development Plan 2000-2006 (e.g. Killadysert, Carrigaholt, Kilkee and Seafield).

A summary of the key issues associated with tourism and recreation development and promotion is provided in *Table 6.6b*, whilst broad guidance is provided in *Table 6.6c*.

Table 6.6b Summary of Key Issues for Tourism and Recreation

<ul style="list-style-type: none">• Pressures from water-based recreation and shoreline development along lough shores (e.g. Lough Derg) and waterways.• Poorly sited and designed second homes and holiday cottages along the short stretch of coastline.• Potential erosion of footpaths by increasing numbers of walkers and mountain bikers, particularly in hilly areas.• The proliferation of golf courses especially on dune systems.

- **Honeypots i.e. the Burren where visitor management needs to be addressed.**

Table 6.6c Broad Landscape Guidance for Tourism and Recreation Developments

<p><i>Tourism and Recreation</i></p> <ul style="list-style-type: none"> • Actively promote east Clare as a tourist destination to spread tourist pressure away from ‘honey pots’, to spread the benefits and disbenefits of increased tourist numbers across the county. • Frequent viewing points and small car parks along roads will provide more opportunities for visitors to experience the landscape, reduce congestion and encourage people to leave their cars. • Development and management of footpaths for short distance (2-3 mile) walks will open up local areas of the landscape to a large number of people. • The use of local materials for tourist developments will help to ensure that they are well integrated with their surroundings and reflect a strong sense of local identity. • The design and siting of golf courses, including associated facilities such as clubhouses, should be sympathetic in scale and design to the character of the area. • The provision of short stretches of raised walkway over heathy/bogland areas may be necessary to prevent both soil erosion and loss of flora along upland footpaths. • Habitat disturbance, disturbance to flora and fauna and increased litter levels should be monitored to ensure there are no detrimental effects to the character of the landscape and local habitats.
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6.7 MINERAL RESOURCES

County Clare has diverse mineral resources. Local building materials are evident in vernacular buildings and stone walls and this suggests that quarrying for rock was once important to the local economy. Extraction is on a relatively small scale and old workings such as those throughout the Burren have become an integral part of the landscape, contributing to historical and industrial character. This is also reflected in the well known flagstones of County Clare, with their meandering trail of animals that once moved across the carboniferous sea floor. These are still being used today in walls and floor tiles.

More recently, however, some quarries have been subject to greater levels of extraction, which in turn is already beginning to have a significant impact on the character and quality of the local landscape. For example, as you approach Corrofin from Ennis, extraction from a quarry on the road margin is beginning to degrade the landscape, local roads and hedgerows. In the vicinity of Broadford there a series of disused slate quarries within the Broadford Formation, which are visually obtrusive.

Extraction of metallic deposits has ceased throughout the county. During the nineteenth century, however, the principal metals produced from metallic deposits in County Clare were silver, lead and copper. Silver and lead were produced at Ballyvergin (6km northwest of Tulla) between 1859 and 1860, lead was produced at Carahan (7km west of Tulla) up until the late 1800s and at Ballyhickey (3km north of Quin) between 1838 and 1846. Crowhill and Kilbreckan were mined for galena and sphalerite. Disused copper mines exist at Ballyvergin, Maghera and Shannaknock. The first recorded zinc producing site was recorded at Milltown 2.5km from Tulla. Gold deposits can be found in the Broadford vicinity near Kilbane and Oatfield. The numerous slate quarries that used to operate around Broadford have also ceased production.

Today there are four quarries still extracting limestone throughout the county, in the townlands of Fortrane More outside Tulla, Balyneillan and Ballybrody near Ennis and Bunratty West near Shannon. Namurian sandstone is currently being extracted southwest of Ennis, at Lismulbreeda for road surfacing material.

A summary of the key issues associated with mineral extraction is provided in *Table 6.7a*, whilst broad guidance is provided in *Table 6.7b*.

Table 6.7a *Summary of Key Extraction Issues*

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| <ul style="list-style-type: none">• The visual impact of quarries in upland locations and associated infrastructure requirements. |
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Table 6.7b *Broad Landscape Guidance for Mineral Extraction*

<p><i>Mineral Extraction</i></p> <ul style="list-style-type: none">• The diverse landscapes of Clare provide opportunities for screening quarries, particularly if they are small scale and in sheltered locations.• Heritage, nature conservation and earth science interest should be conserved by sensitive design and extraction.• Large-scale quarries should be sited where they are screened from principal viewpoints, public roads and local communities.• Phased restoration of active workings and expired workings will lessen or obviate long term impacts and may result in visual improvements.

6.7.1 *Conclusion*

Throughout this study numerous forces for change have emerged, particularly from public consultation, fieldwork and the historical review of the landscape. Of the pressures identified, agricultural decline emerged as an issue of primary concern, combined with a number of other driving forces including forestry, siting of houses and inconsistent planning. These key pressures facing the landscape and inhabitants of Clare have been traced from investigating the change in the landscape from historic times to current uses. The study should therefore provide a baseline against which change can be gauged and monitored.

LANDSCAPE CHARACTER ASSESSMENT GLOSSARY

LANDSCAPE TECHNICAL TERMS

An explanation of how the terms are being used in the context of the *County Clare Landscape Assessment*.

Analysis - the process of breaking the landscape down, usually in descriptive terms, into its component parts in order to understand how it is made up.

Approach - the step-wise process by which a landscape assessment is undertaken.

Assessment - an umbrella term used to encompass all the many different ways of looking at, describing, analysing and evaluating landscape.

Character - a distinct pattern or combination of elements that occurs consistently in a particular landscape.

Character Area (Image Unit) - a unique geographic area with a consistent character and identity.

Character Type (Physical Unit) - a generic term for a landscape with a consistent, homogeneous character. Landscape character types may occur in different parts of the county, but wherever they occur, they will share common combinations of geology, topography, vegetation or human influences.

Characteristic - an element that contributes to local distinctiveness (e.g. narrow winding lanes, vernacular building style).

Classification - a process of sorting the landscape into different types, each with a distinct, consistent and recognisable character.

Description - verbal description of what a landscape looks like. This is usually carried out in a systematic manner, but it may also include personal reactions to the landscape.

Element - a component part of the landscape (e.g. hedges, roads, woods).

Feature - a prominent, eye-catching element (e.g. wooded hilltop, church spire).

Land cover - combinations of land use and vegetation that cover the land surface.

Landform - combinations of slope and elevation that produce the shape and form of the land surface.

Landscape - the term refers primarily to the visual appearance of the land, including its shape, form and colours. However, the landscape is not a purely visual phenomenon; its character relies on a whole range of other dimensions, including geology, topography, soils, ecology, archaeology, landscape history, land use, architecture and cultural associations.

Seascape- may be defined as comprising one of the following; views from sea to land, views from land to sea, views along the coastline or the effect on landscape of the conjunction of sea and land.

OTHER TECHNICAL TERMS

AOD - abbreviation for 'above ordinance datum'

Aeolian - wind blown sediment (mainly sands)

Alluvium - water transported sediment (river muds and flood deposits)

Barrow - a general term for burial mound dating from Neolithic up to early medieval period.

Bawn -(babhun) Irish word generally taken to mean a fortified enclosure or bulwark of mud or stone walls. These are a particular feature of the Plantation Period. One of the conditions of obtaining a large land grant was that settling landlords construct a manor house or strong house surrounded by a bawn.

Biogeography - the study of plant and animal distributions together with the geographical relationships with their environments over time.

Bronze Age - (2500 BC to 500 BC) during this period, Bronze became the primary material in tools and weapons, enabling settlement to expand into lowland areas. Burials were in pits and cists, sometimes in cemeteries and much simpler than in the Neolithic period. Greater emphasis was placed on worship of the living with the construction of ceremonial megalithic stone circles.

Blanket bog - a bog that drapes all features of the terrain such as filling hollows. It is composed essentially of peat on which rough wet moorland or marshland vegetation prevails. It is formed in high rainfall and low evapotranspiration conditions.

Bluffs - steep headland, promontory, riverbank, or cliff, inland a prominent spur from a large hill

Carboniferous Period - period of the Palaeozoic era, which ranged from 345 million years to about 280 million years BP (Before Present). The Carboniferous can be divided into the Lower Carboniferous and the Upper Carboniferous separated by a boundary dated at about 325 million years BP.

Cashel- a stone fort

Cairn- a mound of stones

Chert - a hard siliceous rock, which occurs as bands or layers in sedimentary rocks. Flint is a variety of chert.

Clachan - nucleated group of farm houses where landholdings were organised communally, frequently on a townland basis and farmed by communities with strong kinship ties. Houses were surrounded by a permanently cultivated infield, defined by a study wall outside which lay the outfield and commonage.

Clint - flat topped rock features, which together make up a limestone pavement. Each clint is bounded by a grike.

Crannog- An Island, partly or wholly artificial, built up by dumping timber, earth and stones onto a lake or river bed often revetted with timber piles or palisade.

Colluvial -deposition of sediment or rock particles accumulating from overland flow at the base of a slope and originating from higher slopes where sheet erosion is in progress.

Demesne - lands held by the manor for its own use and occupation incorporating farmland, gardens, woods and buildings. With medieval origins the concept survived until the break-up of the estate system in last present century.

Devonian - the fourth geological period of the Palaeozoic era extending from 395 to 345 million years. It comprises marine and continental deposits, the latter being referred to as the Old Red Sandstone.

Drumlin - an Irish term widely accepted to describe a streamlined, elongated egg-shaped hillock of glacial drift formed under a moving glacier during the ice age. The long axis of the hillock is aligned parallel to the direction of the ice flow. Drumlins usually occur in swarms or 'fields'.

Erratic - a large rock fragment which has been transported by moving ice away from its place of origin and deposited in an area of dissimilar rock types.

Esker - long, sinuous ridge of sand and gravel deposited by sub-glacial stream.

Eutrophic - the state of a water body when it has an excess of nutrients usually derived from agricultural fertilisers. The process by which a water body becomes overloaded with nutrients is known as eutrophication and leads to a dense plant population, the decomposition of which kills animal life by depriving it of oxygen.

Fault - a rupture or fracture of rock strata due to strain.

Flush - an area of soil enriched by transported materials, either dissolved mineral salts or rock particles. Wet flushes are found surrounding springs and rivulets and appear as bright green, rushy areas on a hill slope.

Fluvio-glacial - a term referring to the processes and landforms related to the action of glacial meltwater.

Fulachta fiadh - a Bronze Age cooking site. The method of cooking involved the heating of stones in a fire until they were hot enough to drop into a trough of water to bring it to the boil at which point a parcel of food could be dropped in. The shattered stones were thrown into a pile surrounding the trough on three sides, which over time formed the distinctive horseshoe-shaped mound, which may be identified today.

Geomorphology - the scientific study of the origin of landforms based on a cause and effect relationship.

Gley soils - Soils characterised by being affected by periodic or permanent saturation by water in the absence of effective artificial drainage. Various gley soils exist.

Grike - a deep cleft in a bare limestone pavement, formed by solution along a line of weakness.

Infield - large open field surrounding houses within a clachan. This large open field was situated on the best ground and was divided up into a multiplicity of strips separated by sods or stones in which potatoes were grown. Each family used a variety of strips, which were periodically redistributed (rundale). The infield was permanently cultivated and nutrients were replenished by the use of lime, seaweed and dung.

Iron Age - (600 BC to Early Christian Period) A period of antiquity in which iron metallurgy was used for tools and weapons. Elsewhere in Europe Iron Age communities succumbed to Rome. However, in Ireland the 'celts' survived for many centuries. The Iron Age saw the emergence of kingdoms and the consolidation of territories defended by hilltop fortifications and earthworks.

Kame - kames can result from the accumulation of glaciofluvial sediments in a supraglacial position whence they are lowered by ice melting until they form a tumultuous hummocky terrain after the ice has disappeared.

Kame terrain - an undulating landscape composed of groups of kames and/or kame terraces interspersed or pitted with kettle holes. This type of landform is sometimes termed a kame complex and is created when glaciofluvial sediments are lowered onto the sub-ice surface as the glacier or ice-sheet decays, especially when it can be established that the kame sediments were formed in separate basins of accumulation on the ice surface.

Karstic - term referring to the terrain created by limestone solution and characterised by a virtual absence of surface hollows, depressions and fissures and an extensive subterranean drainage network.

Ladder Farms - farms set in strips of fields with the short divisions at irregular intervals, not unlike a ladder

Lazy bed - garden like method of farming used in marginal areas to maximise the capacity of thin or nutrient poor soils. Manure was laid out in lines on which sods were lapped over using a thin bladed spade (loy) to create a series of ridges and furrows of equal width.

Lower Palaeozoic - first of the eras of geological time lasting from about 600 million years to 240 million years BP. In Europe it comprises the Cambrian, Ordovician and Silurian (which together constitute the Lower Palaeozoic) and the Devonian, Carboniferous and Permian that form the Upper Palaeozoic.

Lough - a term for a body of water, either enclosed as a fresh-water lake or a long, narrow penetration of sea water extending inland from the ocean.

Lumper - a high bulk variety of potato, which tolerates poor soils and requires little manure.

Limestone pavement - a glacially planed and smoothed surface of bare limestone, which has subsequently been dissected by vertical joints (grikes) to produce clints.

Megalithic tomb - a construction made of large stones, dating to the Neolithic and Bronze Age. Four types of megalithic tombs have been identified on the basis of architecture, excavation artefacts and distribution patterns: court, portal, passage and wedge. The various tomb types have been interpreted as a chronological sequence, starting with court tombs and ending with wedge tombs. However the extensive age range provides evidence for a considerable overlap and other explanations for their distribution in the landscape is required.

Mesolithic - (9000 BC - 4000 BC) an archaeological term meaning 'middle stone age' and used to describe the culture of the early Post Glacial period. It is a period of transition when mankind moved from the hunter gathering practices of the Palaeolithic of the last glaciation and the farming and pottery of the post glacial Neolithic. Mesolithic inhabitants frequently lived along coasts, rivers or lake shores and may have used fire to clear forested land for semi-permanent villages. Mesolithic tool kits reflect a need to adapt to the changing environment and are characterised by the presence of microliths and stone axes.

Metamorphic rocks - rocks that have been altered from their original state by various metamorphic processes, generally as a result of mountain building and the intrusion of magma.

Midlandian glaciation - the name given to the final glacial stage of the Pleistocene.

Moraine - accumulation of rock debris carried by glacier or ice sheet and deposited by ice to become a depositional landform.

Motte-and-bailey castle - the earliest form of Norman castle established along key communication routes after the conquest. An inner courtyard was protected by simple earth and wood defences.

Mudbanks - masses of fine grained limestone that were formed by the production of huge amounts of calcium carbonate by organisms. These rose above the general level of the sea floor in a manner similar to modern day coral reefs.

Neolithic - (4000 BC - 2500 BC) an archaeological term meaning 'new stone age' which describes the period of antiquity in which people began to use ground stone tools, cultivate plants and keep domestic livestock. The gradual spread of farming through Europe brought with it the custom of communal burial in megalithic tombs.

Outcrop - the area where a particular rock type, stratum or vein appears at the surface.

Outfield - poorer, more marginal or boggy ground where occasional reclamation might be made for the purposes of growing potatoes.

Palynological evidence-

Peat hag - mossland that has formerly been broken up; it could be a pit, break, gap or chasm in the moss, or an area of turfy or heathery ground which rises out of the peat bog.

Pedology - the scientific study of soils.

Plantation- a newly established settlement generally associated with a period of subjugation of the native Irish elite and colonisation by a Protestant and British landed class in the late sixteenth and early seventeenth century.

Poaching - to become muddy or broken up from being trampled. Largely used to describe stock damage on grassland.

Promotory fort - A fort occurring on a high, prominent projection or point of land, or a rock cliff jutting out boldly into a body of water.

Rath - a type of ring fort found in Ireland mainly dated to the early Christian period, c. 5th-10th centuries AD.

Raised bog peat - under suitable climatic conditions this is built up on top of fen peat. As the depth of the fen peat increases, its living vegetation is less influenced on ground water and becomes more dependent on atmospheric precipitation as a source of moisture. This change in moisture supply results in the growth and development of a raised bog with its characteristic convex surface and acid plant remains.

Riparian habitat - riverbank habitat.

Rundale - periodic re-distribution of strips of land in the infield of a clachan practically universal throughout the poorer lands of the west of Ireland. The re-distribution of strips of land ensured a fair distribution of all soil types to each family of the clachan.

RMP- Record of Monuments and Places.

Scree slopes - through weathering, water contained in rocks expanded on freezing, and blocks and fragments were prised off and crept downhill to accumulate as features called scree slopes.

Semi-natural vegetation - any type of vegetation that has been influenced by human activities, either directly or indirectly.

Silurian period - third period of the Palaeozoic lasting from 440 million years ago to about 395 million years ago. Its rocks comprise thick layers of sandstones, shales, mudstones and limestones.

Souterrain - in most cases a long stone-built chamber sunk into the ground and roofed with stone slabs, usually beneath a house and intended for cold storage.

Turbary - the right of digging turf on another man's land or the ground where turf is dug.

Tundra - the tundra lies between the polar region of perpetual snow and ice and the northern limit of tree growth. The term is used to describe landscapes that are characterised by treeless vegetation consisting of mosses, lichens, sedges and stunted shrubs growing on permafrost. During the quaternary, tundra like conditions were translated south as continental ice sheets expanded.

Tuath- the irish language word for 'people' or 'tribe' it can also mean 'sinister, perverse, malign, evil'.

Vernacular - buildings constructed in the local style, from local materials. Concerned with ordinary rather than monumental buildings.

Veteran tree - a tree that is of interest biologically, culturally or aesthetically because of its age, size or condition.

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Annex A

Consultation report

A1 CONSULTATION PROGRAMME REPORT

A1.1 INTRODUCTION

Environmental Resources Management has been commissioned by the Heritage Council to undertake the first full Landscape Character Assessment for County Clare. A key element in the work programme is consultation with the local community and the numerous agencies both state and semi-state that operate and have an influence on the changing landscape of the county. The aim of this report is to outline the consultation programme and to present the outcomes of this process to date.

A1.2 CONSULTATION PROGRAMME

There have been two separate phases to the consultation programme. Initially, during the course of the fieldwork programme, a series of informal interviews took place largely between agencies and the project team. The more formal consultation programme took place between the 21 to 25 October in the following locations:

- Monday 21 Peppers Pub, Feakle
- Tuesday 22 Burren Centre, Kilfenora
- Wednesday 23 Creek Lodge, Kilrush
- Thursday 24 Queens Hotel, Ennis
- Thursday 24 Queens Hotel, Ennis, County Councillors Workshop
- Friday 25 Queens Hotel, Ennis, Agencies

A1.2.1 Structure of Workshops

The workshops were structured in the following way:

1. Introduction to the process and potential uses of Landscape Character Assessment.
2. Brief overview of the main characteristics of each draft Landscape Character Area.
3. Workshop exercises based on the following key areas:
 - Boundaries and names for each LCA- are these correct/ any suggestions?
 - Key features/valued elements within each LCA that have not yet been identified?
 - Identification of forces for change in each LCA
 - How these forces for change should be addressed?

A2 WORKSHOP OUTCOMES

A2.1 INTRODUCTION

The recommendations and comments from the workshops have been integrated in the following sections, unless there was divergence of opinion between consultees at workshops, this is then noted. In this section the issues raised during consultation in relation to LCA names, boundaries and features or valued landscape elements are discussed.

Some of the LCA names referred to in this Annex are not the same as in the main report as they were changed during the consultation process.

A2.2 BOUNDARIES, NAMES AND VALUES

A2.2.1 *General comments.*

Built heritage and folklore were highly valued across the county and consultees specifically mentioned holy wells, castles, megalithic tombs and stone bridges within the county.

A2.2.2 *LCA 1 High Burren*

A number of issues were raised in relation to the boundary and name of this LCA. Broad consensus emerged that the Low Burren, Sliabh Elva Uplands, Kilfenora Farmlands and Lough Bunny Limestone Pavements should all be referred to as the Burren Uplands Landscape Character Area (LCA). This LCA should extend from Doolin. A number of reasons put forward to justify this change include the following:

- the ridge of mountains (Mullaghmore to Cappamore) provides a natural boundary of the Burren Uplands and to the east of that ridge are lower limestone areas;
- Carran in LCA 2 is considered to be very similar to Blackhead, in terms of monuments etc;
- it was agreed that high commons are found in LCA 2 and therefore this area should be renamed as LCA 1.

It was also widely agreed that the REPS distinction between High and Low Burren was considered quite accurate, as was T.P Robinson's boundary of the Burren.

There was some consensus that more reference should be made to reflect the geology of the area and that geological and soil maps should the most important role in determining the LCAs.

Valued features in this LCA included the uniqueness of the Burren itself. Valued characteristics included its remoteness, the calming effect of woodland and the vernacular architecture that is scattered throughout the landscape.

The Burren is also considered one of the best preserved agricultural landscapes in Europe and consultees generally placed a high value on the historical use of the land, specifically mentioning features such as neolithic walls, tombs, thuailes, sheepfolds, turf mounds, goats structures, herdmen houses and old roads. It was also suggested that the Upper Caher Valley be preserved as a medieval landscape due to the extent of ancient field boundaries and stone cashels. It was widely argued that the historical landscape features of the Burren need to be protected, with particular reference made to holywells, Bóthar na Measa, Colman's bed, Mass rocks and giant, graves (human burial sites).

Other features which the consultees felt merited specific mention included the man made walls at Ballybreen, green sands at Ballyvaughan, water at Ellenvale near Killnaboy which is considered to be extremely cold, Cahora valley stream, Aille River and other river valley walkways. The views from Doolin to Lisdoonvarna, and the dip at Meggah west, (of 300ft) were also identified by consultees as having particular value to this area. While goats themselves were considered a pest, they were valued for their meat and the feral goats of the Burren are believed to produce the best goat meat in Ireland.

A2.2.3 *LCA 2 Low Burren*

This LCA is largely regarded as upland Burren rather than lowland Burren as originally depicted by the study team, for similar reasons to those outlined above in Section 2.2.3. The consultees felt that the area east of mountain ridges (Mullaghmore to Cappamore) including Kilfenora to Corofin road could be considered Low Burren.

Valued features identified by consultees included the Fulacht Fiadhs, stone walls and Leamanagh Castle.

A2.2.4 *LCA 3*

Again it was argued that Sliabh Elva as far as Doolin should be included in LCA 1, and be renamed as the Burren Uplands

Valued features identified for this area were the same as those for the wider Burren area.

A2.2.5 *LCA 4 Cliffs of Moher and Lahinch*

A recommendation emerged that LCA 3 and LCA 4 should be merged due to similar wet soils. Another comment related to extending the Burren boundary from Doolin upto LCA 3.

Moher Slate was identified as unique to this part of the County. Other valued features included remnants of right of way of the West Clare Railway.

A2.2.6 *LCA 5 Kilfenora farmlands*

As previously mentioned, it was felt by many consultees that this area be included in the new LCA referred to as the Burren Uplands.

A paystall at Fairgreen in Kilfenora was commented upon as a valued feature within this area.

A2.2.7 *LCA 6 Lough Bunny Limestone Pavements*

This LCA was considered by many to be inaccurately defined and it was felt that there was little justification for defining this as a separate area due to its many common features with surrounding LCAs. It was recommended that all of this area be included in LCA 1 and/or that the eastern boundary be extended into LCA 7.

There was a considerable amount of discussion on the name of this LCA and it was argued by some that if the LCA was merged with LCA 7 that they should both be renamed as the Upper Fergus Catchment Area due to Lough Bunny feeding into the Fergus. However other consultees considered the Fergus estuary too distant and commented that people may not be able to appreciate the relationship between these loughs and the River Fergus.

A2.2.8 *LCA 7 Crusheen and Corrofin loughlands*

Boundary comments apply to the discussion above in Section 2.2.7. The River Fergus also is considered to have a significant influence within this LCA.

There was a general consensus that the ridge of mountains in LCA 6/7 separates the high Burren from the low Burren.

Of particular interest in this area was the revelation of an upland ridge along a minor road, east of N18, which provides good views across to Corkscrew Hill in the Burren. This is considered an unusual view due to its location quite far east within the county.

Narrow channels cut along loughs in LCA 7 to carry turf down from Tubber to Corrofin were also noted as valuable historical landscape elements.

A2.2.9 *LCA 8 Maghera Uplands*

No issues were raised by consultees in relation to the name of this LCA. However it was argued that boundary should be extended to include the village of Feakle where there was a strong consensus that Feakle and its environs do not display similar characteristics to LCA 17 (Tulla Drumlin Farmlands). Furthermore, there was some consensus that LCA 8 Maghera is widely considered to be part of the Sliabh Aughty range and hence has a strong rationale for being merged with this larger LCA.

Biddy Early's Cottage, Ballycrown (a famine village below Maghera) and a mass rock were identified as important historical features in the area. Folklore, and traditional music were also considered a very distinctive asset within this area, particularly in and around Feakle. Mention was made of Johnny Patterson the singer, who was very popular in his time (c.100 year ago). Archaeological finds such as the Collar of Gold which was found at Glandree were identified as suggesting further archaeological wealth and activity within this area.

Views to Sliabh Bernagh and lakes of east Clare were identified as valued natural features. In addition the views from Feakle south west to the Fergus estuary and Moneypoint were identified as enhancing the upland sense and remoteness of the area.

A2.2.10 *LCA 9 Lough Graney*

There was some debate about merging LCA 8, 9 and 10. Another comment related to the suggestion that the Lough Graney boundary should be drawn tighter in the southeastern area and brought closer to the loughshore.

This LCA was valued for its mosaic of habitats including oak forests, loughs, hilltops, small fields and hedgerows where a diverse wildlife population exists. Additionally the LCA is valued for its rich historical and cultural elements including the strong associations with Brian Merriman of Midnight Court fame.

A2.2.11 *LCA 10 Sliabh Aughty*

It was widely agreed that this area merited its own LCA description with some consensus that Maghera be included within this area. The naming of this LCA was considered to be fine with no alternatives suggested.

The eastern side of this area, including the townlands of Bohatch, Turkenagh and Curracill were valued as being very remote, isolated and having a sense of being unchanged through time. These areas were also considered to be very open and expansive, in part due to the absence of afforestation.

Open areas were valued for their scenic views with the views to Galway Bay from Knockmunna being identified in particular. Open heather areas were also valued for wildlife such as grouse.

A2.2.12 *LCA 11 Lough Derg Basin*

It was suggested that the southern boundary of this LCA be reduced to form a new border at Killaloe. In addition the western boundary should be extended to include upper hills west of Ogonnoloe (The principal reason cited for these boundary changes was that within these locations, the area is still informed by lough views).

Lough Derg itself is considered a valued asset, particularly south of Tuamgraney and east of Ogonnoloe. The sheer scale of the lough was also identified as being of high value.

The strong distinction between the villages of Mountshannon, Tuamgraney and Killaloe and the unspoilt open lough countryside in between is also considered to be of high landscape value. Mountshannon village is regarded as particularly important for its setting, traditional dwellings and vernacular dormer windows.

A2.2.13 ***LCA 12 Sliabh Bernagh***

Consultees felt that this LCA 12 should be merged with LCA 13 mainly because they are both shale tipped uplands with similar habitat types. Secondly, it was suggested that the border of LCA12 should be extended southwestwards to border the O'Briensbridge-Broadford regional road.

Sliabh Bernagh uplands are generally valued for their extensive heather upland areas with high ecological value. A feature to be considered is the area known locally as the Congo as it was one of the largest state purchases of land for forestry (c.1,000 acres). Much of this is being felled currently.

A2.2.14 ***LCA 13 Broadford Hills***

Suggestions to merge this area with LCA 12 are discussed above in *Section 2.2.13*.

The Broadford valley with the rising uplands on both sides of Obriensbridge- is considered one of the most important features of this landscape area. In addition the various mines and the Broadford regional road are valued features.

A2.2.15 ***LCA 14 River Shannon***

There was a general consensus that this LCA be extended to the north eastern and northern boundaries to include the lower slopes of the Broadford Hills and to converge with the suggested boundary change to LCA 11 Lough Derg Basin. Consultees identified landscape distinctions within this area that should be noted. These concerned the influence of Limerick in the southern part of this area and the resulting urban impacts, whilst the northern part of this area retains a more rural sense.

Stone bridges were identified as a valued landscape feature within this area and the wider east Clare area. It was also commented that there remains strong folk beliefs pertaining to white thorn bushes in east Clare.

A2.2.16 ***LCA 16 Sixmilebridge Farmlands***

It was argued that the lower slopes of this LCA on the southern side of the N18 have a very distinctive quality compared to the northern boundary of the

N18. Some consultees suggested that this southern part should be part of the Shannon or Fergus estuary.

This landscape was valued by consultees as being a well maintained landscape with good soils and large fields. It is also considered by consultees to be intact and having a low number of new large houses.

A2.2.17 ***LCA 16 Kilkishen Loughlands***

A number of consultees recommended that that this name be changed to the East Clare Lakes or Loughlands. Although some consultees commented that loughlands sound more Scottish than Irish. However, the Irish nomenclature for lakes is loughs whilst the Scottish name is loch.

Loughs which were identified as being particularly important in this LCA included Clonlea Lough and Lough Callaunaheeda. A distinctive feature regarding this latter lough is the area of limestone on the northern side of the lough and the raised bogs near Ballyblood. Mountcashel Lough, the source for drinking water for the Shannon area, was also considered of value. Finnlough is considered very important for holywells and blessed wells. The holy wells around Finnlough are considered to be curative for sore eyes and there is still a pattern day for this well, on the 27 April.

A2.2.18 ***LCA 17 Tulla Farmlands***

Apart from the suggestion of reducing the northern boundary of this LCA to below Feakle, there were no other suggestions in relation to names and boundaries for Tulla Farmlands.

This area is largely valued for its cultural activities such as music and GAA activities, as well as its holy wells (eg St Senans, St Josephs and St Bridgets) and caves (Tromeen caves at Tulla). Extensive views of the drumlins are visible from the old graveyard at Tulla.

A2.2.19 ***LCA 18 Ennis Drumlin Farmland***

A boundary change recommended for this area referred to the inclusion of Quin and its environs from LCA 16. The reasons cited for this was that the village of Quin would consider itself part of the Ennis sphere rather than the Kilkishen loughlands.

Features that are considered of value in this LCA include limestone outcrops, hidden pockets of shale, Quin Caves which allegedly connect to Quin Abbey, Fairy Trees and Magh Adhair, the inauguration site close to Quin.

A2.2.20 ***LCA 19 Fergus Estuary***

There were no specific issues raised by consultees in relation to the name or the boundary of this LCA. However, a number of consultees felt that the

Shannon estuary should be considered as its own distinct LCA. It was explained by the researchers that the Seascapes Analysis element of this work would be able to recognise this as a specific area.

Valued features of the natural landscape included the mudflats of the Fergus estuary and swallow holes in the River Fergus. The high number of mature beech trees within the Newmarket -on- Fergus area were also highly valued by consultees.

A2.2.21 ***LCA 20 Kilnamona High Drumlins***

No comments were made about this LCA.

A2.2.22 ***LCA 21 Cullenagh River Farmlands***

There were no comments in relation to the name or boundary of this LCA. Evidence of volcanic activity at Cullenagh Lough was mentioned as an important feature in the area.

A2.2.23 ***LCA 23 Killadysert Ridges***

There was strong consensus amongst consultees that the Shannon estuary should be introduced into the name of this LCA. Moreover, it was felt by consultees that the division between this LCA and the southern part of LCA 24, the Kilrush Farmlands, was somewhat arbitrary and that Killadysert Ridges should converge with the southern part of the Kilrush farmlands as far as the town of Kilrush. Reasons cited for this included the strong influence of the Shannon estuary and similar land quality within these two areas.

Otherwise, no comments were made about this area.

A2.2.24 ***LCA 24 Kilrush Farmlands***

There was no issue raised by consultees in relation to the name or the boundary of this LCA apart from the comments made in *Section 2.3. 23* above.

Valued features raised included the gravel mounds and pencil gravel at Cooraclare and the promontory forts along the estuary.

A2.2.25 ***LCA 25 Milltown Malbay Coastal Farmland.***

There was a considerable amount of discussion in relation to LCA 25 Milltown Malbay, LCA 26 Doonbeg, and LCA 27 Loophead Peninsula. It was argued by some that these should be merged as one LCA and renamed as Corcabaiscinn, the earliest name for this area. However, Corcabaiscinn actually encompasses a wider area.

A2.2.26 *LCA 26 Doonbeg Coastal Plain*

There was a general consensus that Sragh Bog which covers a large proportion of this LCA merits its own LCA and should be renamed as Sragh Bog LCA. This is largely due to the different habitat types that exist between the bogs and coastal beaches. To accommodate this change, it was suggested that the Doonbeg area be extended into LCA 27 Loop Head and on the eastern boundary into LCA 24 Kilrush Farmlands. The southern part of this LCA would also be extended into LCA 27 Loop Head. In effect, this would result in much of LCA 26 being merged with the adjacent LCAs and reduced in size to reflect the boundary of Sragh Bog.

Much of the discussions in relation to this LCA were with reference to Sragh Bog itself. The consultees regarded this as a highly valuable habitat and landscape type, due to the presence of diverse flora, a game reserve at Tullaher bog (SAC) and important archaeological remains such as cilins.

Other natural features which were noted for their value included the dunes at Doonbeg which are the highest in Europe and the Blue Pool at Donegal Point.

Valued archaeological features included the church and graveyard in Killard which dates back to 1550 and Bishops Island where there are unusual 50 yard by 50 yard structures.

A2.2.27 *LCA 27 Loop Head Peninsula*

Apart from the suggestion of extending Doonbeg into LCA27 as mentioned above, there were no other comments in relation to the name and boundaries of Loop Head Peninsula.

Valued features that were highlighted included the old ferry at Cammoge Point and the caves at Kilkee. These caves are known as the amphitheatre and at low tide one can climb into a cave known as the 'Pink Cave' which is full of sea anemone and a small pool called Mermaids Pool. The mobile church, known as the Ark was also considered to be of value, this timber church was built 150 years ago in Kilbaha and mass was said from it every Sunday between the high and low water mark.

A3 FORCES FOR CHANGE

A3.1 INTRODUCTION

In this part of the workshop, consultees were asked to identify forces for change (land use and development pressures) for individual LCAs or the county as a whole. Table 3.1 presents the pressures identified for specific LCAs and recommendations for addressing these pressures, by consultees. The remainder of this chapter then discusses general Forces for Change and recommendations by consultees to address these changes.

Table 3.1 Forces for Change for each Landscape Character Area

Landscape Character Area	Pressures identified by consultees	Recommendations
<i>LCA 1 High Burren</i>	<ul style="list-style-type: none"> • Agricultural decline. • Hazel encroachment (in addition, rumours of a new chemical being introduced to reduce hazel scrub). • The greatest threat to the lowland valleys in and around the Burren (i.e Ballyvaughan Valley LCA 1, Cappamore LCA 6, Ballyroan LCA 3) is the radical transformation caused by intensive farming (for example bulldozing). • The destruction of ancient farmsteads, field boundaries, areas of rough grazing with sparkling new, reclaimed, heavily fertilised areas greatly affects the eye and is at odds with the character of the Burren region where continuity rather than unconformity is the visual message. • Feral goats in the Burren are considered a pest and considered to degrade the land by 25per cent. • Pressures from increased tourism and lack of walking routes, cycle routes and public transport. • Farmers in the Burren have conflicting objectives to the Department of Agriculture and Dúchas. • Damage to sand dunes at Fenore due to foot traffic. • Pylons would be highly visible within this area. 	<ul style="list-style-type: none"> • There should be incentives for farming in the Burren to maintain the area. • Burren is so diverse it needs to be managed at farm level. • There was a strong consensus that money should be invested into restoring Leamanagh Castle. • In addition, it was felt that consideration should be given to the re-introduction of Red deer, which occupied the Burren until the middle ages, to control the spread of hazel. This has been successfully undertaken in Connemara National Park. • Burren tourism tax, insurance policy for tourists on farmers land • Consistency between objectives of different departments and farmers. If the Burren is to be retained, farmers need to be supported financially to do this. • Control of foot traffic on the dunes through provision of managed pathways etc.
<i>LCA 2 Low Burren</i>	Pressures were discussed in relation to the wider Burren area	

Landscape Character Area	Pressures identified by consultees	Recommendations
<i>LCA 3 Slabh Elva</i>	<ul style="list-style-type: none"> It is feared that extensive coniferous forestry plantations will pose a threat to the preservation of monuments and views of the area. The Burren area should not be exploited as a resource for forestry. 	<ul style="list-style-type: none"> Replace Sitka spruce with trees that grew there naturally i.e scots pine which is a complimentary habitat to the Burren and would accommodate birdlife.
<i>LCA 4 Cliffs of Moher and Doolin</i>	<ul style="list-style-type: none"> Pressure from holiday home developments. Conflict over the visitor centre at the Cliffs of Moher. Large coaches on roads. Restricted access to Donegal Point. Pressure from road signage, example cited of 32 illegal signs at the Cliffs of Moher. 	<ul style="list-style-type: none"> Park and ride facilities. Need to resolve problem of insurance for farmers and tourists crossing their land.
<i>LCA 5 Kilfenora Farmlands</i>	<ul style="list-style-type: none"> Forestry application at Lickeen Lough. 	
<i>LCA 6 Lough Bunny Limestone Pavements</i>	<ul style="list-style-type: none"> Consultees commented that the construction of local new buildings should be avoided in this area due to the presence of a high water table (winter) and widespread wetland pockets. 	
<i>LCA 7 Corrofin and Crusheen Loughlands</i>	-	
<i>LCA 8 Maghera Uplands</i>	<ul style="list-style-type: none"> Rural depopulation a big issue in Feakle and upland areas of Maghera. Difficulty in getting projects off the ground in low density areas. 	<ul style="list-style-type: none"> Positive discrimination to retain to rural populations.
<i>LCA 9 Lough Graney</i>	<ul style="list-style-type: none"> Issues concerning the quality of area were raised. The area is affected by catchment of Bleach River and contains Dubhui land (rough grazing poor land). 	

Landscape Character Area	Pressures identified by consultees	Recommendations
<i>LCA 10 Sliabh Aughty</i>	<ul style="list-style-type: none"> • Issues identified included afforestation. It was widely held that this LCA is heavily afforested with conifers, which in turn affects neighbouring lowland areas in terms of scenery and habitats. • This area was considered by some as a good area for wind farm development. 	
<i>LCA 11 Lough Derg Basin</i>	<ul style="list-style-type: none"> • Issues identified include ribbon development along scenic routes particularly at Ogonnoloe where single houses extend for 1 ½ miles along the road outside the speed limit of the village to the north. • Pressures from marina development e.g. Killaloe. 	<ul style="list-style-type: none"> • Clustered housing in hidden pockets off roads.
<i>LCA 12 Sliabh Bernagh</i>	<ul style="list-style-type: none"> • Some consultees identified this area as appropriate for windfarm development. • Visual impact of pylons. 	
<i>LCA 13 Broadford Hills</i>	<ul style="list-style-type: none"> • Pressure from the visual impact of pylons. 	
<i>LCA 14 River Shannon Farmlands</i>	<ul style="list-style-type: none"> • The villages of Cloonlara and O'Briensbridge are under pressure from large housing developments within the villages which can negatively impact on the village character. • Decline in farming west of the Shannon. • Pressures from quarrying intensification. 	<ul style="list-style-type: none"> • Develop policy to encourage the development of houses that are suitable to the character of areas.
<i>LCA 15 Sixmilebridge Farmland</i>	-	

Landscape Character Area	Pressures identified by consultees	Recommendations
<i>LCA 16 Kilkishen Loughlands</i>	<ul style="list-style-type: none"> • Kilkishen Castle is in need of restoration. • Archaeology around Doon Lough under pressure from illegal searches using metal detectors. 	
<i>LCA 17 Tulla Drumlin Farmlands</i>	<ul style="list-style-type: none"> • Due to its elevated position, consultees felt that linear development from the village centre down the slopes would be visually intrusive. • Pressure due to the destruction of vernacular cottages along the Tulla Road. 	
<i>LCA 18 Ennis Drumlin Farmlands</i>	<ul style="list-style-type: none"> • Consultees recognise the growing pressure from urban development particularly eastwards to Tulla from Ennis. • Removal of coppice woodland is seen as a threat. • Pressures from increased road construction resulting in loss of hedgerows and land - take in Ennis area • Ennis Limerick rail under utilised. Concerns over bypass of Ennis -may impact on opening up surrounding areas for development. • Pressure from quarrying intensification visually and depletion of a natural resource0 	<ul style="list-style-type: none"> • Reinstate and screen quarries.
<i>LCA 19 Fergus Estuary</i>	-	<ul style="list-style-type: none"> • There was general agreement that Newmarket-on-Fergus should be marketed as a museum town for a number of reasons, these include firstly that it led the 1st Co-op in Ireland, secondly due to the history of the O Briens, Moughan Mill and the Old Coach Road.
<i>LCA 20 Kilnamona High Drumlin Farmlands</i>	-	

Landscape Character Area	Pressures identified by consultees	Recommendations
<i>LCA 21 Cullenagh River Farmlands</i>	<ul style="list-style-type: none"> • Kilmaley was considered by some consultee as an appropriate area for windfarm development. • Cancer cases at Inagh thought to be associated with windfarm development. 	
<i>LCA 22 Sliabh Callan Uplands</i>	<ul style="list-style-type: none"> • Growing pressure from wind farm development in this area, however some consultees felt that Ben Dash was a good location for such developments. 	
<i>LCA 23 Killadysert Ridges</i>	<ul style="list-style-type: none"> • Problems of asthma related to Moneypoint, washing of coal does not take place even though it is meant to. 	
<i>LCA 25 Milltown Malbay</i>	<ul style="list-style-type: none"> • Visually sensitive area for housing development due to lack of vegetation to screen developments. • Visual implications of young forestry throughout West Clare, which will become apparent in years to come. 	<ul style="list-style-type: none"> • Retain hedgerows and trees rather than knocking them.
<i>LCA 26 Doonbeg Coastal Plain</i>	<ul style="list-style-type: none"> • Due to the ecological importance of Sragh Bog consultees were concerned over the windfarm application granted at Manroe, which is very close to Sragh Bog. Concerns were also raised over forestry plantations near the Bog. • Predominance of uninhabited buildings, a recent survey revealed that there are 82 uninhabited houses in Doonbeg • Visually sensitive area for housing development due to lack of vegetation to screen such developments • Increasing pressure from new development ,i.e White Strand at Killard. • Poor condition of side roads around Doonbeg. 	<ul style="list-style-type: none"> • Government should provide a grant scheme to restore old houses and schools. • Retain hedgerows and trees. • Clare County Council need to invest money into maintaining these roads

Landscape Character Area	Pressures identified by consultees	Recommendations
<i>LCA 27 Loop Head Peninsula</i>	<ul style="list-style-type: none"> • Consultees were concerned over the development of large wealthy houses and the destruction of old buildings, for example at Kilkee three old buildings were demolished to build apartments. • Visually sensitive area to housing development due to exposed nature of the area and lack of vegetation to screen such developments. • Rural depopulation. 	<ul style="list-style-type: none"> • Retain hedgerows and trees.

A3.2 *GENERAL FORCES FOR CHANGE IDENTIFIED AT COUNTY LEVEL*

A3.2.1 *Agricultural Decline*

Agricultural decline was seen as one of principal pressures facing County Clare. Consultees were largely concerned over the viability and future of the smaller traditional farms and part time farmers. Currently there are only 7,500 farmers left in Clare, dairy farmers have declined since 1997 at a rate of 200 a year.

There was also a strong feeling that the pace of agricultural decline was happening very quickly and that there is little or no debate at national level as to the consequences of this change or indeed the impact of this change on livelihoods and landscapes in Ireland. It was felt that while farm diversification is promoted as a means to address agricultural decline, it would not adequately deal with all the farmers within the county. An example was cited of niche marketing of agricultural products and whilst this is a positive approach, it has limited opportunities. A further comment was also made that the culture of agricultural production is a key issue that needs to be addressed in the debate about agriculture in Ireland. A comment was made that if this study could initiate such debate, it would be a considerable achievement.

Consultees were also concerned over the physical state and degradation of the physical landscape where infrastructure, machinery, stone walls, drains and hedgerows are all considered to be in a state of decline. Moreover, this decline in farming activity was leading to land abandonment, with scrub and rush encroachment in more marginal areas. People were generally concerned over the loss of local creameries, herdmen houses and outbuildings which are considered an integral part of the historic landscape.

While the success of REPS 1 was realised, consultees were concerned over the slow uptake of REPS 2, and felt that this was attributed to a number of reasons, namely that the penalties were too high, secondly that the payments were too low, thirdly that part time farmers did not have the time to manage the land in order to meet REPs requirements and finally that the system was not suitable for the larger more intensive farmer.

It was also stressed that there is a need to control agricultural pollution to avoid eutrophication of lakes. It was argued that as Clare currently has the third highest water quality nationally, it is important to maintain or improve this standard.

Other issues mentioned by consultees included the comment that setaside was outrageous and goes against an agricultural culture of production, and also that Dúchas imposes grazing regimes that are too restrictive.

A further important comment related to the need to recognise the importance of diverse farming practices in landscape management and the creation of different farming systems. It was felt by some consultees that nationally and centrally agreed agricultural prescriptions do not adequately reflect local conditions and impose regimes that are sometimes unsuitable for local areas. In terms of the built environment, a force for change identified by some consultees related to the fact that new farmhouses are no longer built in farmyards and this is resulting in a significant change to the agricultural landscape.

Recommendations for addressing agricultural change.

It was concluded that agricultural decline should be addressed by a number of agencies and local bodies including the Department of Agriculture and REPS, Teagasc, IFA, An Taisce and Macra na Feirme. It was agreed that in order to reduce the rate of agricultural decline, funding and education needs to be provided for farmers. In addition farming needs to be made more attractive. The package for education qualifications, salary and promotions is currently seen as far more attractive than farming. In addition, the current educational system does not adequately inform pupils about rural life and agricultural living and this should be a part of curricula at primary and secondary level.

Consultees also felt that the current and next generation won't regard part time farming as a viable option unless alternative economic farming benefits are investigated such as eco-tourism.

Consultees felt that there is very little cooperation between agencies and they strongly advise that someone should be based in Clare to make decisions regarding farming issues such as supplementary feeding and summer grazing, rather than decisions being made in Dublin or Wexford. In addition, consultation should be required between farmers, departments and agencies every three months.

Macra na Feirme should offer incentives and training courses to protect wildlife.

Finally, the comment was made that while the perception is that we own the landscape, every section is usually in private ownership and the majority is owned by farmers, therefore it is essential to involve farmers in landscape management.

A3.2.2

Forestry

The general feeling amongst consultees was that there is too much coniferous forestry throughout the county. Afforestation is regarded as a major issue for a number of reasons. Firstly, planting patterns frequently appear artificial and are visually obtrusive; secondly, forestry does not support wildlife and nitrates can leach into waterbodies damaging flora, fauna, fish and waterfowl, particularly where planting has occurred in riparian areas; thirdly, it does not provide a sustainable income for the locals and little money is invested into

the county from it. There is a need to expand the benefits of forestry and increase the skills and income from this resource. In essence, it was felt that forestry needs to put further back into the rural areas as it is utilising the landscape but only producing a basic raw material.

Other concerns expressed were that trees and parkland trees planted in 1750s are now dying and they need to be saved or replaced by natural tree cover. It was also mentioned that old bridges are unable to carry heavy forestry machinery. A future conflict was identified by some between those who want to conserve the bridges and forestry interests who may want them replaced.

The consultees felt the planning process was one of the key areas that should be investigated in order to solve some of these issues. Consultees criticised the planning notice system, as they felt it did not provide enough detail on the proposed locations for forestry. Concerns were also expressed over planning applications being submitted just underneath the threshold for an Environmental Impact Statement (EIS).

Recommendations for addressing Forestry

It was recommended that the planning authority (Clare County Council), and the forest service (Coillte) be responsible for controlling forestry. Overall it was agreed that guidance and training on forestry planting should be provided, more native deciduous woodland should be planted rather than coniferous and afforestation should be avoided where possible in visually sensitive areas.

In addition Clare County Council should be responsible for adopting policies locally to overcome planting regimes that are decided in Dublin and not Clare. It was recommended that the county development board (CDB) should play a strong role in this.

A3.2.3 *Housing*

Some of the key issues identified in relation to housing were concerns over the abandonment of houses, destruction of stone walls and hedgerows and the overall neglect of traditional vernacular style architecture. An example was cited of stone walls being knocked down and replaced with concrete posts that are out of character with the surrounding landscape. Consultees felt that there are a significant number of derelict buildings scattered throughout the county. A strong and recurring feeling expressed was that the houses should be restored, the stone walls be retained and that the government should provide incentives to encourage reuse of old houses rather than building new ones. Otherwise the pressures for new build will continue because the process of house restoration is too costly.

The pressure for single dwellings was also recognised, the consultees were generally in favour of family members returning to their land to build. They suggested that the problem existed where people were allowed to build large

and poorly designed holiday homes in visually sensitive areas which contributed little to the economy in off peak seasons.

Other issues identified included inconsistency in allocation of tax incentives for housing developments. Some consultees felt that areas like the the Burren should receive grants for B & Bs and could not see the justification for incentives being focused on areas such as Lahinch, Liscannor, Kilkee and Spanish Point. Another point raised by consultees was the perceived inconsistent application of planning within the vounty and the feeling that this was creating a considerable amount of problems and loss of goodwill towards the planning regime.

Recommendations for addressing housing

It was strongly advised that the planning authority (Clare County Council) set stricter regulations in relation to housing design, materials used (e.g. no shiny slate roofs), size and location. Some argued that one of the reasons for the decline in traditional style buildings was related back to the planners themselves, where urban planners who may be less sensitive to rural lifestyles and values are making many of the planning decisions.

Moreover, the enforcement of planning conditions was also considered an issue. Planners, it was felt should ensure that the planning conditions have been adhered to when the development is complete. Prevention and better forward planning and management was identified by consultees as a means to address some of these issues.

Another recommendation related to new houses currently being built 60 feet in from the road. Consultees recommended that the hedgerows should be retained with a clause that if the road is to be widened the county council will have the authority to reclaim the land. Boundary improvements were also suggested such as retaining as many hedgerows as possible to provide screening of houses and promoting boundary treatments that reflect local landscape styles. There was also a recommendation that oil tanks should be placed in outbuildings or properly screened.

A further recommendation was that the description provided for each character area should be taken into consideration when choosing development type, style and colour. It was recognised that there is a need to encourage individuality of housing styles but at the same time recognise vernacular styles and the need to sit comfortably within the surrounding landscape.

In order to address the issue of derelict buildings, financial incentives are needed at national level to encourage restoration of older dwellings above new build. In the absence of such incentives, it was felt by many consultees that the building of new houses, will continue to be more economically viable

Consultees also felt that positive discrimination is needed to encourage people to move to /stay in isolated, rural areas and this is one means to address rural depopulation.

A3.2.4

Windfarms

The general consensus by consultees was that windfarm development could be beneficial to the county and should be promoted. Consultees pinpointed a number of areas which they felt could accommodate windfarm development without having a negative impact on the landscape. Consultees also recognised the importance of finding a balance between what is acceptable to communities and energy requirements. They advised that a national cap on the production rates for wind energy should be adhered to.

Recommendations for addressing windfarms

The benefits of windfarm development would be achieved if there were a widely available proactive policy (and approach), and guidance on best practice, rather than the reactive system which currently operates. Those consulted also felt that the potential for off shore windfarm development and wave energy should be recognised and explored as an option for the future. It was suggested that a national plan for offsite windfarm locations could assist this.

A3.2.5

Tourism

The general consensus in relation to tourism is that it is focussed in three main areas (Cliffs of Moher, Bunratty and the Burren) rather than a more equal distribution throughout the county particularly in east Clare. Consequently the roads and facilities were deemed unsuitable to accommodate the numerous large coaches and flocks of tourists who centre on these principal areas.

Consultees also recognised the need to control amenities such as motor boats, watersports and swimming on lakes during the breeding season to protect wetland birds. In addition, there was a lot of concern raised over protecting the beaches throughout the county, particularly Blue Flag Beaches.

Recommendations for addressing tourism

It was recommended that a tourism strategy, which is community based, should be prepared for the county, facilitated by consultants and led by Shannon Development. This plan should cover a range of topics including protecting features (such as river valleys), heritage, visual areas etc. The tourism strategy should also look to manage tourism during peak seasons.

Clare County Council should put in place timber and fencing walkways to protect sand dunes, and where appropriate adopt preservation orders.

There was also a recommendation that grant aid should be available to extend tourism within the county and to restore ecclesiastical sites. In addition, consultees recommended that incentives should be given to travel agents to promote Shannon Airport and County Clare.

A3.2.6

Roads

Road improvements are considered to be creating negative visual and environmental impacts (i.e. loss of hedgerows and road run off pollution). However, where road improvements are required it is recommended that the improved roads not be made wide enough to facilitate overtaking, particularly where there are cyclists and walkers. Consultees also recognised the need to protect roads from impacts of coaches particularly on coastal and Burren upland roads.

Potentially inappropriate road designs were also cited by some consultees as a force for change. An example was given of the use of crash barriers in dual carriageways. This is because the EU on safety grounds does not approve ditches. Some consultees felt that ditches are safer and more sensitive to landscapes.

Recommendations for roads

It was recommended that Clare County Council be responsible for a number of issues. These include the preservation of the East Clare Walkway, green roads, bog roads, traffic calming measures including ramps the extension of speed limits outside the village limits and protection of railway lines as walkways.

In addition, the tourism strategy should include measures on public road design, and views from roads should be protected

Also, weed killers on road verges used by Clare County Council should not be sprayed in summer. Native shrubs should be planted along roadside verges instead of trees. It was argued that there is a need to look at future landscape management and road design and maintenance.

Improved boundary design reflecting landscape character, such as stone walls and hedgerows where appropriate, was recommended above the use of post and wire or concrete fences.

In addition, some consultees felt that straightening roads made them more dangerous in some cases and rather than straightening roads, consideration should be given to improving road markings to make roads safer. The example was given of lining roads with yellow line verges and a central line to reduce the narrow feel of the roads. Furthermore, the straightening of roads also led to loss of traditional roadside treatments.

Iarnrod Eireann, Bus Eireann and private bus services should tackle transport issues between Limerick and Ennis. A suggested solution was to provide mini-buses to service outer areas, for example the rural bus serving Feakle, Flagmount and Whitegate.

A3.2.7 *Litter*

Litter is more commonly found in tourist hotspots e.g. Kilrush. In addition, farming activity has resulted in black silage liners being evident on occasion, e.g. on Loop Head. The dumping of cars and farm machinery is also seen as pressure on the landscape and has increased with the introduction of the National Car Test.

Recommendations

The consultees recommended that scrap yards and other unsightly features should be screened to minimise their negative landscape impact. In addition, better enforcement of litter laws and if necessary enclosure to limit access for cars in remote areas should also be considered. The consultees did also recognise resource constraints on the issue of litter enforcement but also felt that continuing education and improved waste management facilities would in part address this problem.

A3.2.8 *Natural Resources*

Water based recreational activities were identified as an increasing pressure, in addition to the ongoing degradation of designated habitats.

Also, in some areas there was an intensification of quarry extraction and this was problematic to address when the quarry was pre-1963.

Recommendations for addressing natural resources

Consultees felt that there is need for stronger commitments to biodiversity and implementation of relevant agreements from relevant agencies and local groups. They also recommended that further investigation be carried out to address the creation and enhancement of wildlife corridors within the county.

A3.2.9 *Pylons*

Visual impact of pylons and masts needs to be considered, and they are particularly inappropriate and highly sensitive in a number of areas within the county.

Recommendations for pylons

There were no clear recommendations from consultees as many felt that where pylons existed the damage was already done. Nonetheless, a desire was expressed that visual impact be taken into consideration in the planning of new pylons or masts.

A3.2.10 *Social and Cultural Issues*

Many consultees felt that County Clare has a strong historical heritage and it is highly diverse. However, this heritage is in danger of being destroyed through neglect, forestry and lack of investment.

Particular areas identified as being under pressure are graveyards, castles, ancient field boundaries and old schools.

The archaeology of the county was also considered to be under threat of exploitation from illegal metal detectors and archaeological digs.

A comment was also made regarding potential conflict between people moving into the county and the existing population, whereby both have different value systems and this can sometimes create conflict.

Rural depopulation remains a strong issue and is raised elsewhere in this report (Section 3.2.3).

Comments were also made in relation to community consultation and there was some consensus that whilst people are consulted they are not often involved in the actual decision making, nor do they receive feedback from agencies (the county council was cited as an example) on how their consultation concerns and recommendations will be addressed.

Recommendations for addressing social and cultural issues

It was suggested that plaques containing historical information should be placed at all sites and monuments in order to educate locals and tourists as well as retaining the old spelling of towns and townlands.

The philosophy of the Clar programme is considered to be good for tackling the rural depopulation issue but its implementation is a problem, especially since it now comes under the LEADER programme and its accompanying criteria.

Additionally, Clare County Council should be responsible for bringing businesses out of Ennis and spreading them to other areas of the county, for example by decentralisation of council offices

A3.2.11 *Fisheries*

Fisheries within the county are regarded as an under-utilised resource.

Recommendations for addressing fisheries

No specific recommendations were made in relation to this issue.

A3.2.12 *Landscape Character Assessment*

Although the majority of consultees were positive and enthusiastic about the landscape character assessment process. A number of consultees raised concerns in relation to the potential uses of the landscape assessment and the maps that will be produced as part of the process. There was real anxiety

about how planning policy could be affected by this process and to what ends different agencies could use the landscape assessment.

Some consultees felt that while the concept of landscape assessment is valid, the process is inadequate and that it would be very difficult if not impossible to capture the whole range of issues that inform landscape perceptions and management. They felt that it would take years to do proper fieldwork and recommended in some instances that the scope of the project be increased. Moreover, addressing quality of life issues is felt by some consultees to open up a whole debate and range of issues at a social level.

Others commented that the concept of landscape character assessment is too abstract and difficult to understand. Finally, there was a concern expressed that due to this project being undertaken by the Heritage Council, which is regarded as a prestigious organisation, the final output will have considerable weighting behind it and hence increase its legitimacy.

Recommendations

In conclusion it was felt that this exercise very clearly defines the scope of landscape assessment. This would ensure that people who see and use the map and report will know exactly how to use it. The report should stress that it is only a preliminary assessment of the landscape. Landscape character assessment should be defined and explained to people in a clear manner and use less abstract and technical terms.

The landscape assessment findings should be taught at local schools throughout Clare, so that the youth will understand their surrounding landscape and heritage.

Wider and more extensive consultation should be undertaken.

Annex B

Oblique Photographs



Figure A

Long rectilinear fields (Enclosed Land 3, in 1963) and divided rough ground with sinuous irregular boundaries (Rough Ground 2) and straight boundaries (Rough Ground 3), south of Kinvarra. Slieve Carran in the background.



Figure B

Undivided rough ground (Rough Ground 1, in 1963) at Gleninagh Mountain, viewed from Blackhead Bay.



Figure C

Finvarra Point Martello Tower in 1963, an architectural monument of national significance, which provides a focus and a vantage point, within Blackhead Bay. Behind it, long rectilinear fields (EL3) and rough ground divided by sinuous boundaries (RG2)



Figure D

Straight bounded, irregular size and shape fields (Enclosed Land 4, in 1964), near Cloonlara. Characteristic of land improved and drained in the nineteenth century (see Healey and Hickey 2001), and possibly settled by 'New English' in the seventeenth century



Figure E

Mullaghmore, southeast Burren, rough ground divided by sinuous boundaries (RG2, in 1964) with a relict landscape of prehistoric field boundaries. Relict landscapes are recorded on the Register of Monuments and Places maintained by Dúchas www.heritagedata.ie

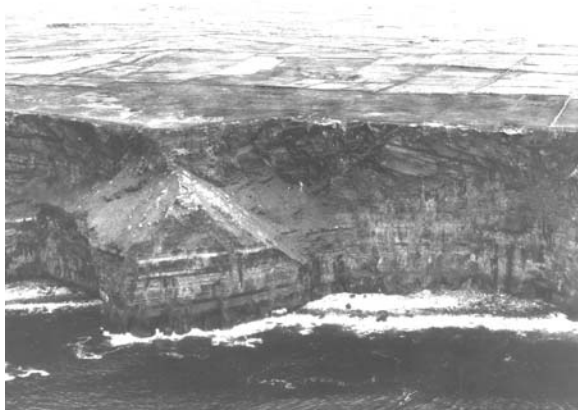


Figure F

Cliffs of Moher in 1965, the coastal intertidal zone (CI) with a narrow fringe of rough ground (RG2) and straight-bounded fields (RG3).



Figure G

Loop Head 'Ladder Farms' in 1965, with long rectilinear fields (Enclosed Land 3) and irregular straight-sided fields (Enclosed Land 4), set out from roads constructed after 1787 (as recorded on the Grand Jury Maps).



Figure H

Drumlin farmland near Crusheen in 1965, with mixed straight and curvilinear edged fields (Enclosed Land 2 - the predominant Clare Historic Landscape Character Type)



Figure 1

Killone Abbey in 1970, the focus of devotional monuments including a holy well and altar at the river crossing (Devotional and Ritual Landscape), together with Broadleaved Woodland and Killone and Ballybeg Loughs (Water Bodies 1). The setting provides a balance of seclusion with good transport links to Ennis and beyond.

Annex C

Geographical Information System (GIS) Report

C1 **GIS**

C1.1 **DATA**

A comprehensive set of digital data were compiled during the pilot landscape character analysis for County Clare. The data were compiled and analysed using the ArcView Geographic Information System (GIS) software. The pilot database contained the following data:

- Landscape Character Types
- Ordnance Survey 1:50,000 vectors
- 1:25,000 raster scans of 1:10,560 OS Maps
- Geology and soils
- Digital terrain model
- Corine 1990 land use, with FIPS additions
- Historical landscapes (based upon 1:25,000 scale maps)
- LPIS vectors (field boundaries) and statistical summaries
- Sites and Monuments Records
- Natural Heritage Areas (NHA's) and Special Areas of Conservation (SAC's)
- Results of Expert Classifier

During the present phase of the work the database was modified to hold the following additional spatial information:

- Landscape Character Areas
- Seascape Character areas and character types (derived during the course of the work)
- Landcover 2000 class boundaries (derived from new CORINE 2000 landcover map)
- Admiralty charts
- Bathymetry
- Seabed surface materials (very limited)
- Biomar dive sites
- Archaeological (Discovery) data
- Scenic views and visual analysis results

Additional data were sort on marine habitats and seabed geology. These data were very limited and were not used during the study.

C1.2 **GIS ANALYSIS**

In addition to storing the map data, the GIS was used to produce additional maps using various forms of statistical and spatial analysis. These maps include:

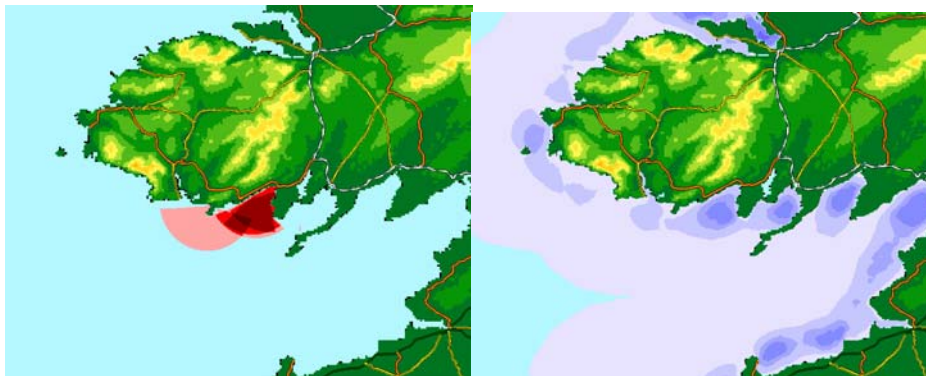
- Seascape visual analysis
- Simplified land cover

- Simplified solid and drift geology
- Archaeological site-lines (for cairns and castles)
- Scenic routes and scenic areas

C1.2.1 *Seascapes*

The coastal environment is often not included in traditional landscape characterisation. In addition to the inclusion of coastal zone data in the GIS a visual envelope analysis of the coast was performed. This was accomplished using the OS digital terrain model and software developed by ERA-Maptec to calculate visual envelopes. The visual envelopes were calculated for recognised viewpoints (from the 1:50,000 digital map data), from roads and settlements. The resultant visual envelope maps were used to define the visual characteristics of seascapes.

Figure 1.1 *Visual Sensitivity of Seascapes from recognised viewpoints (left) and from the whole coast (right)*



C1.2.2 *Landcover*

A revised land cover is necessary because the existing landscapes GIS for Co. Clare contains only a land cover map for 1990. There may have been significant land cover changes since this date and the minimum mapping unit (25 ha) may preclude important small land cover units. The new Corine 2000 landcover data were used for this study.

C1.2.3 *Geology*

The geological data were simplified into the main lithologies (for solid geology) and main geomorphical types (for drift).

C1.2.4 *Archaeology*

Viewsheds were calculated for the hilltop cairns of the Burren. These viewsheds help to delimit relationships between the sea and land in the north Burren area during the seascape analysis.

Site-line analysis was undertaken for all castles by calculating the intervisibility between a castle and all its neighbours. The site-line analysis helped to define areas of high visual dominance of castles (during the landscape character analysis) and visual boundaries between castles along the coast (during the seascape analysis)

C1.2.5 *Scenic Analysis*

Scenic areas and scenic routes are a valuable adjacent to landscape character assessment. The County Development Plan for County Clare 1999 (*new draft currently at consultation stage*) contains a map of scenic areas and scenic routes (*Figure 2*). It is understood that this map was produced using field work and consultation of paper ordnance survey maps.

The role of digital analysis in the production of scenic maps was investigated during the present study. The analysis involves the use of the digital terrain model (from the Ordnance Survey - 50m horizontal resolution) in conjunction with road data. Two maps were produce:

- Map of areas visible from roads (*Figure 3*)
- Map of points along roads which have great extent of views (*Figure 4*)

The analysis of scenic areas from the GIS (*Figure 3*) shows in general good correspondence with the 'visually vulnerable' areas of the County scenic map expect for the areas of the High Burren. The inability of the GIS to define the high Burren as a visual area may be because of the paucity of roads in this area; - the GIS analysis was based upon viewsheds from roads and this the Burren might be show as relatively less visible if there are less roads in the area.

The analysis of scenic roads (*Figure 4*) has done a good job at defining scenic roads with good views along the coast, but has not done such a good job at defining scenic road in-land (again in the Burren for example).

Figure 2: Scenic Evaluation from 1999 County Development Plan

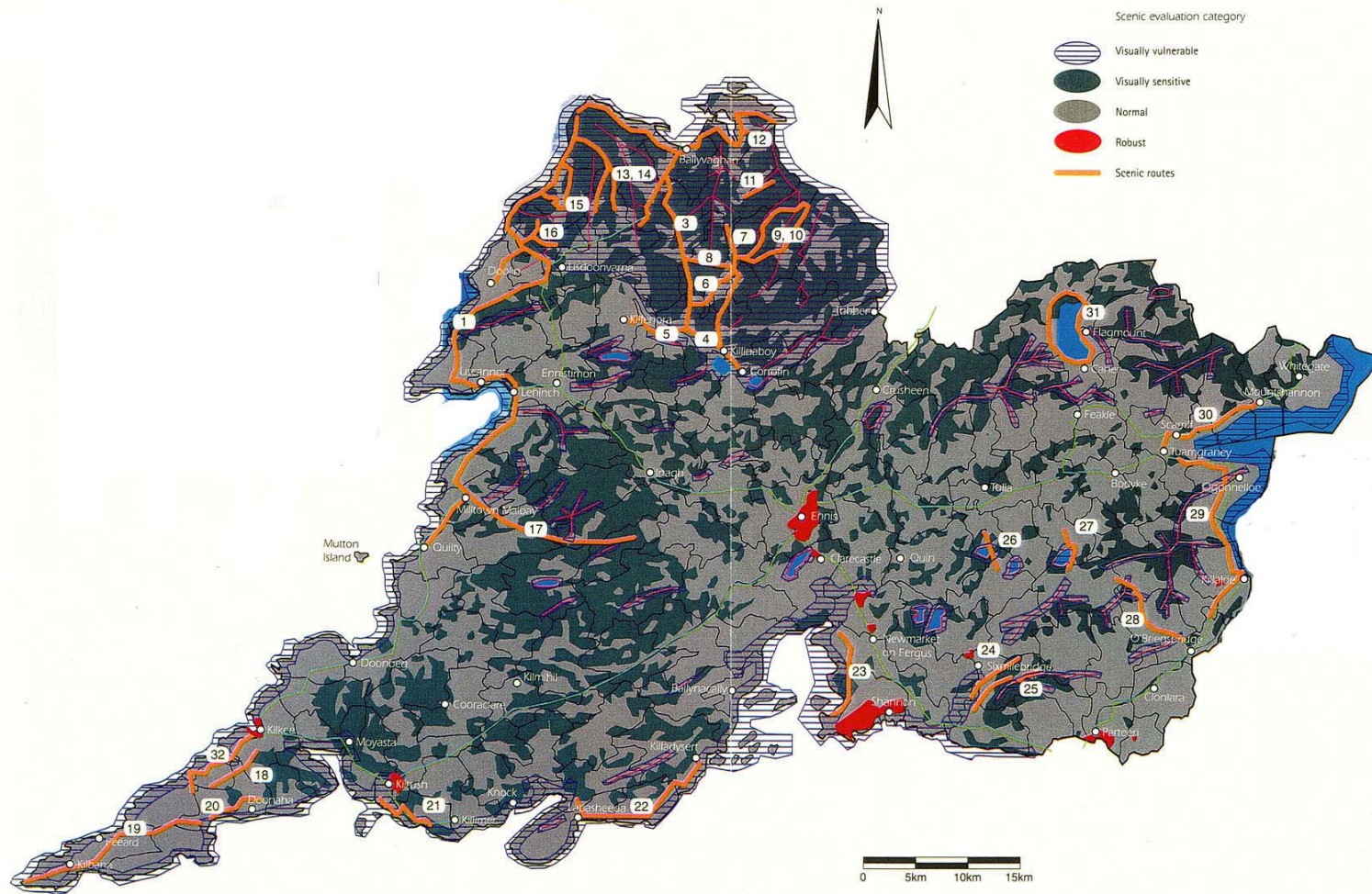


Figure 3: Map of areas visible from roads

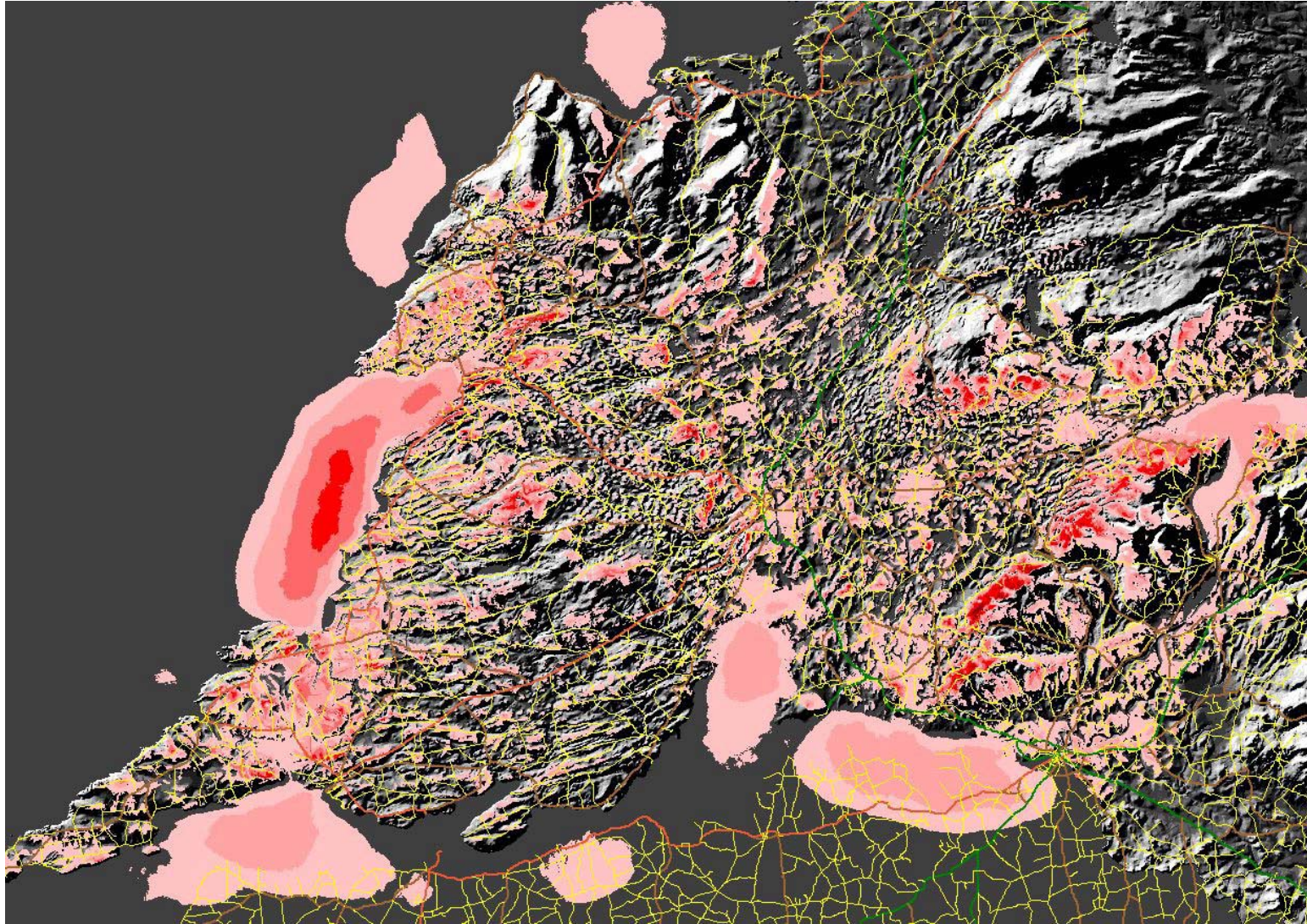


Figure 4: Map of points along roads that have great extent of views

